Handling the Risks

A Report on the Prairie Grain Economy

Economic Council of Canada 1988

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Foreword

In May 1986, Premier Grant Devine of Saskatchewan wrote to me, suggesting that the Council give some consideration to the serious problems facing Canadian and world agriculture.

After extensive consultation with agriculture experts in Canada and abroad, the Council decided that it would launch a project on the Prairie grain economy, using its own resources, but that extra funding would be required if it were to address both the domestic and the international dimensions of the situation in a timely manner. The work plan was based on a partnership of expertise between the Department of Agricultural Economics of the University of Saskatchewan, under the Project Director, Dr. Andrew Schmitz, and a small group of economists at the Council, with Dr. Ludwig Auer working as Deputy Director.

Funding for the project was provided by the governments of Saskatchewan and Alberta, the federal Department of Agriculture, and three private-sector organizations – The Prairie Pools Incorporated, Cargill Limited, and the Royal Bank of Canada. The project was formally launched on 31 March 1987, when the Prime Minister wrote to the Council, saying:

> I am encouraged to see the Council proposing a significant collaborative effort with federal and provincial governments and the private sector. I am pleased to support this particular study as a vehicle for public debate on a pressing problem which concerns us all, the future of the Prairie grain economy. I expect it to produce an invaluable exchange of information, while leaving the Council, as always, to its own independent views, conclusions, and recommendations.

Throughout the research phase of the project, the Council relied on the advice of an Advisory Committee, composed of representatives of each of the funding organizations, several outside experts, and three Council members. This Committee met four times to provide valuable advice and to comment on the research papers prepared in the context of the project, of which five will be published within the next year. (Their titles are listed at the end of this report.) The Advisory Committee was chaired by Caroline Pestieau, Deputy Chairman of the Council, who also assumed overall management responsibility for the project.

The Council and the Project Director used four of the research studies mentioned above (and the preliminary work prepared for the fifth) as the foundation for this report, which provides both a synthesis of the research results and the Council's policy advice to federal and provincial governments and to the farm community.

From the beginning, the research team focused on two dimensions of the Prairie grain economy: the turbulent international market on which most Prairie crops are sold, and the response of Canadian agricultural policies and Prairie farmers to that turbulent marketplace. The underlying message of our work is that Prairie grain production, while internationally competitive, has become a riskier business than it used to be. The international grain trade has been, and will continue to be, highly cyclical. As a result, the Prairie grain economy is constantly afflicted by boom-and-bust cycles. International competition and technological progress are increasing the demands on farm managers.

Clearly, the past two years were among the worst that the Prairie farm community has ever endured: wheat prices reached a low of $2.11 per bushel in August 1987; then, after prices had firmed up in early 1988, the weather played havoc with production. Worse still, the stabilization program that was intended to create a safety net for farmers in the bad years was not up to the challenge of the recent slump. So the federal government provided *ad hoc* assistance of various kinds, amounting to $2.2 billion over and above existing insurance and stabilization programs. While the assistance was welcome, it has also had negative consequences, both for grain producers, who have become far too dependent on transfer payments (which represented over 90 per cent of their net cash incomes in 1987), and for the federal treasury, which was already struggling with an excessively large deficit.

The main thrust of the Council's advice is that important changes in agricultural policy are required to restore the profitability and entrepreneurship of the Prairie farmer and to ensure that the farm sector will have the resilience to withstand the next down cycle, whenever it comes. The Council is convinced that the vast tracts of land in the Canadian Prairies have the potential to produce, on a sustained basis, a reasonable standard of living for a large number of farm families. But farming will be risky and will require skilful management.

This is not the first time that the Council has studied Canadian agriculture. Several of the Council's Annual Reviews and other reports in the past have contained sections or chapters on various aspects of the agricultural sector – notably, on marketing boards in *Reforming Regulation* (published in 1981); on government assistance to the farming sector in *Intervention and Efficiency* (1982); and on income instability among grain producers, the outlook for livestock farming, and the economics of grain transportation in *Western Transition* (1984). In addition, a number of technical or research studies dealing with particular aspects of agriculture have been released under the Council's sponsorship.

The present report, however, is the first to be devoted exclusively to agriculture, and more particularly to Prairie grain. I wish to thank, here, the organizations that supported this project, not only in the financial sense but also with the long hours required to review the research studies and to comment on them. For us, it has been a rich experience to get acquainted with, and to learn from, farm leaders in the Prairie region and government officials of the Prairie provinces. We hope that these new relationships will continue in the years ahead and that both farm leaders and officials will, in turn, be able to build upon the Council's advice in their efforts to handle the risks in the Prairie grain economy.

Judith Maxwell
Chairman

Handling the Risks

READER'S NOTE

The reader should note that various conventional symbols similar to those used by Statistics Canada have been used in the tables:

..	figures not available
...	figures not appropriate or not applicable
--	amount too small to be expressed
-	nil or zero
e	estimated figures
x	data confidential, to meet the secrecy requirements of the *Statistics Act*.

Details may not add up to totals because of rounding.

1 Prairie Agriculture

Canada owes its worldwide reputation as an agricultural producer to its Prairie provinces. Three-quarters of the country's farmland is in that region, and its output makes a major net contribution to Canada's balance of international trade.

While the direct contribution of Prairie agriculture to GNP is relatively modest (around 3 per cent), its role in Canada's trade is much greater. Grains, oilseeds, red meat, and live animals, most of which originate in the three Prairie provinces – Manitoba, Saskatchewan, and Alberta – accounted for between 5 and 6 per cent of Canadian exports in the period 1985-87. In 1987, wheat sales alone were worth over $3 billion – about 3 per cent of total exports. Since Canada only imports very small quantities of grains and oilseeds, its exports of those commodities make a major net contribution to the merchandise trade balance (44 per cent in 1987).

Historically, the settlement and the infrastructure of the Prairies grew with agriculture, and farming remains a mainstay of the region's economy. It accounts for 8 per cent of the aggregate gross provincial product of the three Prairie provinces (19 per cent in Saskatchewan) and provides 11 per cent of private-sector employment in the region (Table 1-1). Even today, agricultural commodities represent about one-quarter of the rail freight in Canada.

There are approximately 130,000 self-employed farmers in the Prairie region. Their most important crop is wheat: on average, it accounted for 50 per cent of the receipts from Prairie crop production over the period 1982-87. The second and third most important crops are oilseeds and coarse grains. Over the same five-year period, the value of Prairie cash receipts from livestock and livestock products averaged $3.3 billion per year – about half the $6.4 billion realized from crop production.

The Crisis

The Prairie region's grain and oilseed economy has been going through a period of crisis in recent years, as prices have fallen dramatically from their most recent peak in 1981. In the 1986/87 crop year, the price of wheat dropped, in real terms, to its lowest level in Canadian history – even below that of the 1930s and well below the cost of production in most regions. Barley and oilseed prices also declined between 1981 and 1988. Only livestock producers, who benefited from cheap feed grains, did well in the mid-1980s. At the time of writing, both crop and livestock farmers are threatened by serious losses caused by the severe drought experienced during the spring and summer of 1988.

In 1986 and 1987, the federal government spent more than $4 billion to maintain the incomes of grain producers. Without that help and without their earnings from off-farm activities, a large number of Prairie grain farmers would have been without cash for living expenses. Indeed, in the 1986/87 crop year more than 90 per cent of all realized net farm income in the Prairie region came from government transfers.

Yet government assistance on such an unprecedented scale has not solved the current problems of Prairie agriculture. Federal transfers have supported the incomes of farm operators, but they have not relieved the debt problem facing individual farmers. In the late 1970s, many farmers borrowed to buy land at inflated prices, expecting grain prices to continue to rise in the 1980s. Instead, prices fell, bringing the value of land down with them. The rise in interest rates and the fall in product prices led to major cash-flow problems for many farmers, while at the same time land values and farm equity suffered a decline.

In 1988, crop prices turned around and rose rapidly, as a drought hit farmland across Canada and the United States. These higher prices will boost market incomes in 1988 and probably in 1989 as well. Since market income will only replace income from government transfers, however, even those farmers who have grain to sell will still not have enough cash to pay off their debts – or even to service them, in some cases.

A second, and more far-reaching, problem is how the Prairie grain economy will survive in the face of the export subsidies granted to their domestic producers by Canada's two major competitors in world grain markets – the United States and the European Community. Canada exports a much larger share of its grain production than either of these two trading entities, and because its financial resources are

Table 1-1

Portrait of Prairie Agriculture, 1987

	Manitoba	Saskatchewan	Alberta	All three provinces
		(Thousands)		
Number of farm operators[1]	25	58	47	130
		(Per cent)		
Farm output as a proportion of gross provincial product	7	19	5	8
Farm employment as a proportion of private-sector employment	9	22	8	11
		(Millions of dollars)		
Value of farm cash receipts (average, 1983-87)[2]				
Crops	1,196	3,258	1,921	6,375
Livestock	715	755	1,782	3,252
Total	1,911	4,013	3,703	9,627
		(Per cent)		
Distribution of cash receipts from major crops (average, 1983-87)				
Wheat	44	60	39	51
Oilseeds (canola, flaxseed)	19	12	18	15
Coarse grains (oats, barley)	12	7	17	11
Other crops	25	21	26	23
Total	100	100	100	100

1 These figures, which are based on the Labour Force Survey, differ from those in Tables 6-11 and 6-12, which are based on the census.

2 Farm cash receipts are the receipts from the marketing of crops and livestock; they exclude receipts from income-stabilization, supplementary, and deficiency payments.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

more limited, it cannot sustain a long-term subsidy war. The current round of multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT) – the Uruguay Round – is aimed at reducing those distortions, but progress is slow and painful.

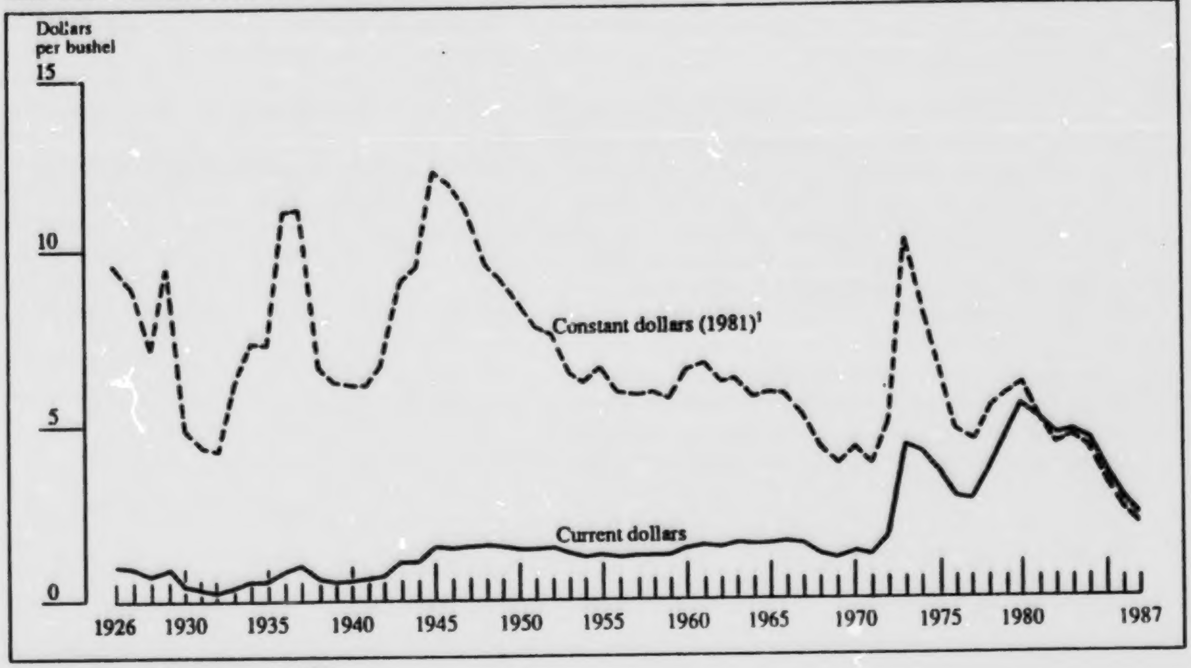
The crisis that hit Prairie farmers in the 1980s illustrates the unpredictability of the international grain economy. In the 1950s and 1960s, wheat prices were relatively stable, although in real terms they were on a declining trend (Chart 1-1). Prices then rose dramatically in two cycles during the 1970s, only to fall abruptly during the first half of the 1980s. Farmers, responding to current-dollar figures rather than to long-term trends, behaved as if prices were to remain high throughout the 1980s.

They were encouraged in this behaviour by many academics, politicians, and bankers who were also forecasting high grain prices. There had been widespread fear of an oncoming scarcity of primary commodities, including food, in the early 1970s. These fears seemed to be confirmed as incomes and food imports rose in many developing countries and as the Soviet Union became a large importer of grains. In 1972/73, a poor harvest forced the Soviet authorities to buy 14 million tonnes (metric tons) of wheat, equivalent to nearly 20 per cent of worldwide imports that year. The growth in demand for foodstuffs, particularly in the developing countries, was accompanied by inflationary pressures that were fueled, at least in part, by easy access to petrodollars and by low real interest rates.

Inevitably, producers and governments responded to the consequent rise in grain prices. In the United States, farmers brought idle land back into cultivation; in Canada's Prairie provinces, producers reduced summer fallow and planted more wheat; and many developing countries invested in new, high-yielding varieties of wheat. Meanwhile, the European Community's Common Agricultural Policy was

Chart 1-1

Real and Nominal Prices of Canadian Wheat, 1926-87



1 Deflated by the farm-input price index.
SOURCE Based on data from Statistics Canada.

transforming much of Western Europe from a major importer to a major exporter of wheat.

The U.S.-led recession of 1981-82 contributed to lower income growth in many developing countries, at a time when increased supplies of grain were coming onto the market. As a result, worldwide growth in per-capita food consumption slowed in the 1980s to less than two-thirds of the rate recorded during the 1970s. Since those growing supplies coincided with falling demand in the early 1980s, the stocks of wheat and coarse grains expanded, thus provoking a drop in prices.

It is now obvious that the expectation of continuing increases in grain prices was unwarranted. The pattern of abrupt weather-induced shortages leading to a cycle of price increases, surplus production, and falling prices can be expected to continue. This boom-and-bust cycle is an underlying characteristic of most agricultural production, and both farmers and policy makers must learn how to handle the risks associated with it.

The Viability of Prairie Grain Production

The outlook for the 1990s suggests that the world's capacity to produce grains will continue to exceed effective demand. Many developing countries continue to suffer from critical food shortages, but at the same time the industrialized countries have an excess production capacity in agriculture. Thus the food shortages are caused by a lack of income and by inadequate transportation and handling facilities rather than by insufficient production. The boom-and-bust cycle will therefore be played out within a downward trend in real prices. A complicating factor is that changes in the world's climate – the "greenhouse effect" – could alter this outlook as we go into the 21st century. Some scientists now believe that without major changes in energy use and in conservation practices, the southern Prairie region will be too dry for cultivation by the middle of the next century. More-northerly regions could become arable, but the dislocation to farming would be severe.

Meanwhile, the international market for grain – for wheat, in particular – is changing. Not only are Canada's former customers in Western Europe now exporting wheat themselves, but demand in many of the new markets – especially in the centrally planned economies and in the developing countries – is moving towards medium and soft varieties and away from the high-protein, hard wheat in which Canada is most competitive.

Prairie grain farms are becoming more capital-intensive and require far greater management skills than in the recent past. That puts greater pressure on the traditional mode of operation, based on the family farm. At the same time, the long-term cost/price squeeze and the instability of farm incomes seem to be pushing Prairie farmers towards ever greater dependence on government transfers to avoid foreclosure and bankruptcy.

The severity of the recent price decline and the unfavourable international trade environment have led many Canadians, both within the farming community and beyond it, to doubt the long-term viability of Prairie grain production. Although our research shows that it is facing serious problems, we do not share the current pessimism about the future of the grain economy. A review of the principal characteristics of Prairie crop production will help to put this view into perspective.

The Nature of Prairie Crop Production

The Prairie grain economy has traditionally been export-oriented, as farmers in the three provinces can produce far more grains and oilseeds than Canadians can consume. The dry land base is particularly well suited to growing the high-protein, hard varieties of wheat. Although cattle raising preceded wheat cultivation, wheat has long been the predominant crop in the Prairie region; the grain-handling and -marketing institutions, and the infrastructure required to move the product to its markets, have played a large role in the region's economy.

In capital-intensive grain farming, the ratio of the value of assets to production is high. Because individual farmers cannot raise their prices by offering a product that is different from that of their competitors, they can only increase their incomes by expanding their output. But large-scale production requires more expensive machinery, and that in turn requires a larger acreage, which must be used more efficiently. Producers are encouraged – by tradition, by the nature of their business, and by the Canadian tax system – to reinvest their profits in their farms rather than in other assets. As a result, many farm families tie up the bulk of their savings in the farm, and that leads to a high degree of asset concentration. In contrast with other industries, outside equity participation in agriculture is rare; as a result, the owner/operator and his family carry the entire risk of the operation.

Because the boom-and-bust cycle makes farming very risky, farm incomes are exceptionally volatile. Theoretically, farmers should diversify their activities to counter this instability; research done for the Council shows, however, that the prices of the various agricultural commodities produced in the Prairie provinces (including a number of livestock products) tend to move together. As a consequence, it is difficult for farmers to reduce the fluctuations in their income by adding different crops and livestock activities to their product lines. After examining about 20 different combinations of crops, livestock activities, and portfolio investments, we found that there is not much scope for stabilizing incomes by diversifying away from wheat and into other crops or into livestock. So it is not surprising that Prairie farmers have continued to specialize in what they have traditionally done best – wheat production.

Farmers can also stabilize their farm incomes by taking off-farm jobs. The rate of increase in off-farm activities in the 1980s has been higher among farmers in the Prairie region than in the other parts of Canada. But in the Prairies, particularly in Saskatchewan, the availability of off-farm jobs largely depends on a healthy agricultural sector. Because of the scattered population and of the distances between large urban centres, there are limited employment opportunities for farmers who wish to stabilize or supplement their incomes.

An unfortunate combination of income instability, overcapitalization, asset concentration, unfavourable weather, and very low grain prices has led Prairie farmers in the late 1980s to become dependent on government transfers. In turn, the availability of public money has weakened the incentive to adopt any of the diversification options that do exist. As a result, a paradoxical situation has developed, in which the traditionally independent owner/operator of a family farm is encouraged to tailor his production activities to the eligibility criteria of government support programs. Many Prairie farmers are dismayed by this situation.

A Regional Perspective

Farmers in other parts of Canada share some of the problems of their Prairie counterparts – the dependence on unpredictable weather, the growing capital costs of farming, and the long-term decline in the prices of agricultural commodities relative to the costs of agricultural inputs and of other goods and services. But there are important differences.

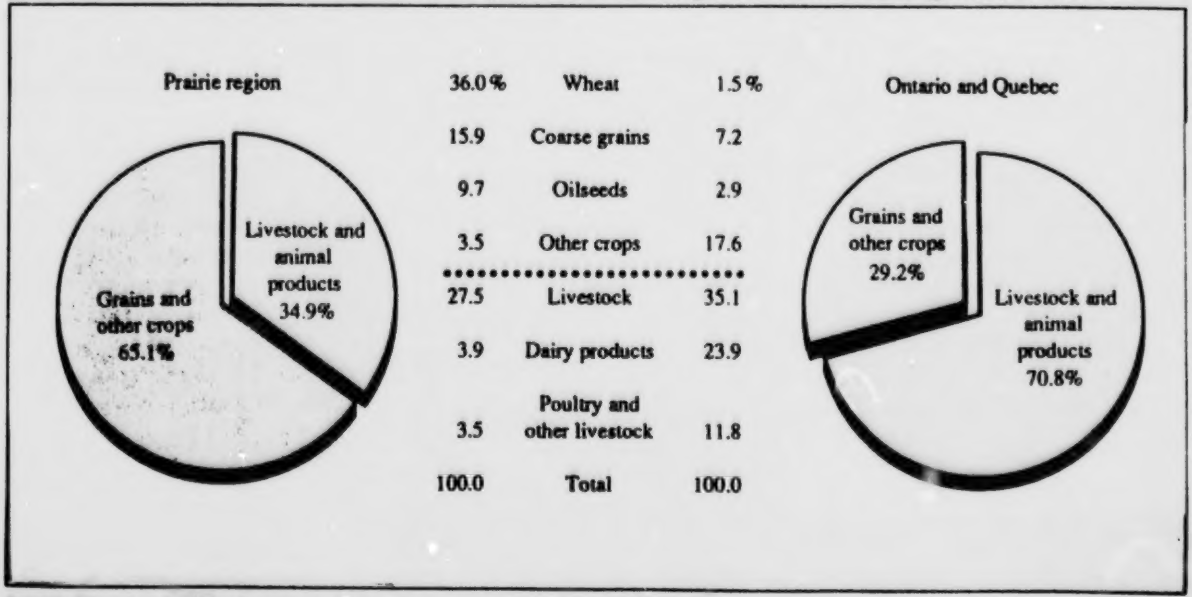
Quebec and Ontario farmers sell a much larger share of their output in the domestic market and produce a greater diversity of commodities (Chart 1-2). In addition, they have access to more opportunities for off-farm work. And land prices, which are affected by the price of agricultural products, have fluctuated less widely in central Canada than in the Prairie region. This is primarily because the domestic market is more stable, because weather conditions in Quebec and Ontario are more predictable (thus lessening the uncertainty with respect to land use), and because alternative uses for farmland are more numerous in those two provinces. Quebec and Ontario producers are therefore less vulnerable to swings in production and in world commodity prices than are Prairie farmers.

Supply-management and marketing boards, which control the output of poultry and dairy products (accounting for about 35 per cent of farm receipts in central Canada, compared with about 7 per cent in the Prairies), are another factor that contributes to the stabilization of farm incomes while raising prices to consumers. Thus the incomes of farmers in central Canada are supported by their fellow Canadians, but that support is less visible – and therefore more difficult to measure – than that accorded Prairie crop farmers, since much of it takes the form of higher consumer prices rather than direct transfers from government. The Council is currently working on ways of comparing the two kinds of support.

The contrast between export-oriented agriculture in the Prairies and production for the domestic market in central Canada is not quite as acute as it used to be. While only 20 to 30 per cent of Canadian wheat is consumed domestically, between 60 and 70 per cent of Prairie-produced coarse grains are sold in Canada. But the most important change in recent years has been the increasing production of canola (or rapeseed), which accounted for nearly 12 per cent of the acreage seeded in the Prairies in 1986, compared with about 2 per cent in 1968. Canola is now the second or third most important crop in Alberta and Manitoba. Sales of the raw seed are divided almost equally between domestic and export markets. In the last few years, about 60 per cent of Canadian crushed canola seed has been used domestically in the form of oil and meal, and about 40 per cent has been exported.

Chart 1-2

Distribution of Average Farm Cash Receipts, by Source, Prairie Region, and Ontario and Quebec, 1978-87



Prairie region		Ontario and Quebec
36.0 %	Wheat	1.5 %
15.9	Coarse grains	7.2
9.7	Oilseeds	2.9
3.5	Other crops	17.6
27.5	Livestock	35.1
3.9	Dairy products	23.9
3.5	Poultry and other livestock	11.8
100.0	Total	100.0

SOURCE Based on Statistics Canada, *Agriculture Economic Statistics*, Cat. 21-603.

There are important differences between the three Prairie provinces with respect to farm and off-farm opportunities for diversification. Saskatchewan is the most dependent on export markets, because its soil and climate have led it to specialize in wheat production. In addition, off-farm work is usually harder to find in that province than in Alberta and Manitoba. Agriculture in the latter two provinces is more diversified and less dependent on foreign markets; and, as noted earlier, it accounts for a smaller share of provincial output and employment.

A Period of Change

In recent years, a number of farmers and entrepreneurs have attempted to increase the value-added of agricultural products by finding export market niches or by processing grains locally. The development of high-quality oats for the racehorse industry in the United States and for the health-food market is one example. Others include the fractionalization of grains and oilseeds to produce wheat germ, essential oils, and inputs for baby food. These developments are currently overshadowed by the volume of the bulk grain export trade, but they may be harbingers of the future, as more countries become self-sufficient in raw grains and oilseeds.

Furthermore, the Canada-U.S. Free-Trade Agreement can be expected to modify substantially the century-old orientation of Prairie agriculture. Traditionally, bulk grain shipments, either overseas or to central and eastern Canada, have dominated the sales of Prairie farm products. Now, however, as the United States and Canada are increasingly becoming a single market for many agricultural commodities, the elimination of differing health and hygiene standards is likely to facilitate the sale of Canadian livestock and red meats in the United States. Significant increases in canola sales south of the border are also expected once the agreement begins to take effect. As a result, the north-south axis will be strengthened, and dependence on overseas markets will be somewhat reduced.

At the time of writing, it appears that the grain-price cycle is in its rising phase; but the hardships are far from over. It is true that there were major increases in grain and oilseed prices during the spring and summer of 1988: the prices of coarse grains doubled, while those of wheat and canola rose by about 50 per cent. But as a result of the drought, many Prairie farmers have only a fraction of their usual volume to sell. Thus farm incomes will continue to be severely depressed for at least another year.

The Council's Report

Our concern in this report, however, is how to manage the risks associated with boom-and-bust cycles over the medium and long terms. Must Prairie farmers continue to depend on government transfers? What is the appropriate way to share their risks? And how should agricultural policies respond to changes in the environment over the next few years? Among the changes expected to occur in the medium term are the implementation of the Canada-U.S. Free-Trade Agreement in 1989, the adoption of a new farm bill in the United States in 1991, and the conclusion of the GATT's Uruguay Round in 1990 or soon thereafter. Thus the time is ripe to assess the outlook for the Prairie grain economy, to examine existing policies, and to set out some policy proposals aimed at meeting its needs over the longer term.

In our examination of the issues, we first look at the international scene: the world market for grains and oilseeds (Chapter 2); the agricultural policies of the major trading entities (Chapter 3); and Canada's current role in the world market (Chapter 4). We then review, in Chapter 5, the economic trends of Prairie agriculture and the way in which farmers have responded to the recurrent boom-and-bust cycles. In Chapter 6, we describe the current financial crisis and its effect on different types of farms. In Chapter 7, we assess Canadian policies and programs directed at Prairie agriculture and attempt to determine why the existing stabilization programs have been unable to cope with the hardships of the current "bust." In Chapter 8, we present ideas for the longer-range reform of these stabilization programs, based on the idea of decoupling farm-income support from the production of particular agricultural commodities. Finally, in Chapter 9, we put forward objectives and recommendations for Canadian policy makers.

2 The Market Outlook for Grains and Oilseeds

Prairie producers are world-class participants in three of the major agricultural commodity markets: wheat, coarse grains, and oilseeds. In this chapter, we look at the changes occurring in these international markets.

Three Major Markets

Different categories of wheat are sold on the wheat market: high-protein, hard wheat, used for bread flour; "durum" wheat, used for pastas; medium-quality wheat, used for chapatis, noodles, and flat bread; soft wheat, suitable for cakes and biscuits; and lower-grade wheat, which can be used for animal feed. In general, the higher the yield per hectare, the lower the quality of the wheat – a situation resulting from various factors, including the climate, as well as moisture and soil conditions. In northern Saskatchewan, for example, every increase of 1 percentage point in protein is obtained at the cost of a loss of up to 15 per cent of the yield. A high proportion of glutamine protein (or gluten) is desirable, since it makes the dough extensible and enables bakers who use traditional techniques to produce high-pan breads.

High-protein, hard wheat, in which Canada excels, has always commanded a price premium and is still sought by a number of countries, including the United Kingdom, Japan, and the Soviet Union. However, new baking processes developed in the United States and the United Kingdom, as well as the possibility of extracting gluten and adding it to dough made from lower grades of wheat, have reduced the scarcity value of high-protein wheat. As a result, the price premium has been declining over the past 25 years. Some importers, such as most of the Latin American countries, buy only medium- or low-grade wheats. These lower grades are the fastest-growing segments of the market.

Although coarse grains may be used for human consumption, when they are traded internationally they are generally destined to feed livestock and are referred to as feed grains. The demand for coarse grains is therefore derived from the demand for meat and dairy products. The most common coarse grains are corn, barley, and sorghum, which account for approximately 56, 20, and 8 per cent, respectively, of the world output. Barley is Canada's main coarse-grain export. The U.S. corn price sets the floor for the major coarse grains, as well as for the low-grade wheat used for feed. The price relationship between wheat and coarse grains varies considerably with market conditions, but the returns to wheat are almost always higher than the returns to barley.

Oilseeds are a major component of the international market for fats and oils, which include a wide range of products, such as peanut, palm, and olive oil, as well as animal and fish products. The market is a complex one, since the end products – edible oils, fats, and meal for animal feed – have different characteristics, which are reflected in the way in which they can be used. As a result, they are close, but imperfect, substitutes. The two key characteristics are the respective percentages of oil and meal in the products (approximately 20/80 for soybeans and 40/60 for canola), and the protein content in the meal (40 to 50 per cent for soymeal and 30 to 40 per cent for canola meal, compared with over 60 per cent for fish meal). Soybeans dominate the international market for oilseeds, accounting for about one-half of world production and 76 per cent of world trade; canola, which is a specialized variety of rapeseed, accounts for about 10 per cent of production and for the same share of trade.

The Market Actors

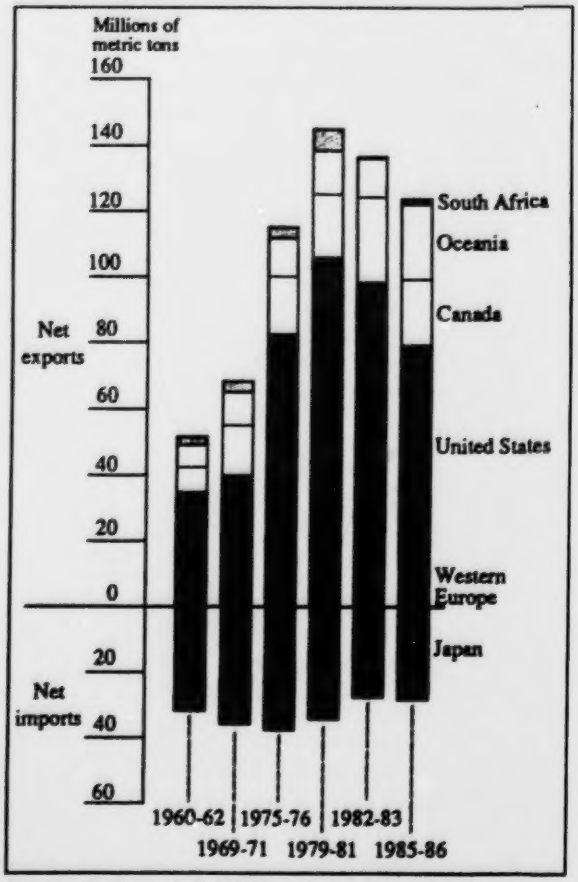
Prior to the Second World War, there were three net grain-importing countries or regions – Western Europe (mainly the United Kingdom), China, and Japan – with Western Europe being the dominant importer. All other countries or regions were exporters, including the Soviet Union and virtually all of the countries and territories collectively known today as the Third World. This trading pattern, made up of many exporters and a few importers, has changed dramatically over the years. By the mid-1980s, Western Europe had become a grain exporter, and all developing countries and centrally planned economies were significant importers. Japan is now the only large importer among the developed countries.

The United States has changed from being a relatively unimportant trader in the prewar period to being the dominant grain exporter (Chart 2-1). Western Europe, which was a net importer (over 26 million tons in 1960-62), has become a net exporter (13.2 million tons in 1985/86). The Soviet Union has switched in the opposite direction: a net exporter until 1970, it became a major, though highly variable, importer in the 1970s and 1980s (Chart 2-2). China moved from approximate self-sufficiency in the 1960s and 1970s to become a major (but irregular) wheat importer, following economic reforms in the 1970s and 1980s. All developing countries and regions, particularly in Asia and North Africa, have now become significant importers. India, the third major consumer after China and the Soviet Union, enters the import market in times of poor harvests. Thus the current pattern of trade is one in which there are a few large exporters and many importers. In combination with changing production and consumption patterns, it makes for a volatile grain market, which is often destabilized further by national agricultural policies.

It is more difficult to give a bird's-eye view of the oilseed market, because it is made up of three overlapping markets (those for raw seed, oil, and meal). In the seed market, the United States is the dominant exporter, followed far behind by Argentina and Canada. The European Community is the major importer, followed by Japan. Malaysia is the most important exporter of edible oil, followed by the European Community, which is also the major importer. Brazil, the

Chart 2-1

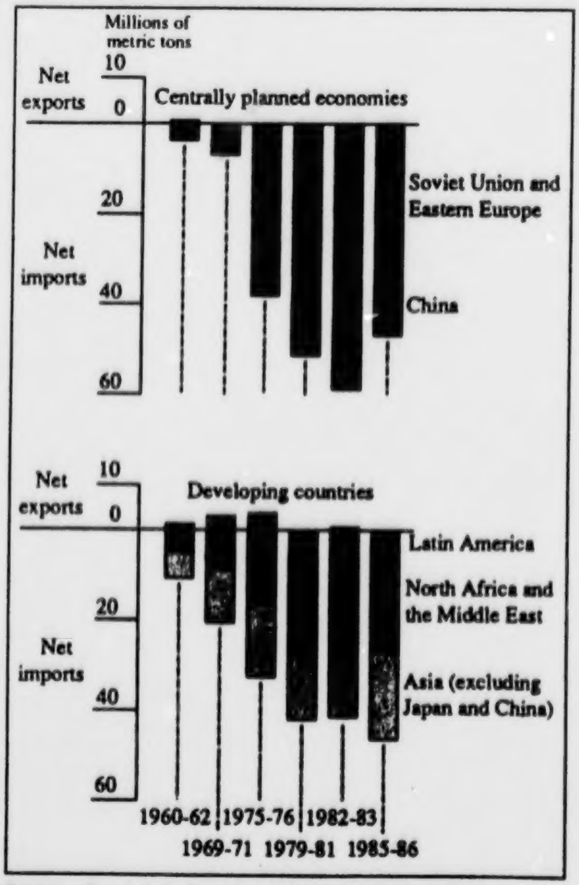
Net Exports and Imports of Grain in the Developed Countries, 1960-86



SOURCE C. Carter, A. F. McCalla, and A. Schmitz, *Canada and International Grain Markets: Trends, Policies, and Prospects*, Economic Council of Canada (forthcoming).

Chart 2-2

Net Exports and Imports of Grain in Centrally Planned Economies and Developing Countries, 1960-86



SOURCE Carter et al., *Canada and International Grain Markets*.

United States, and Argentina are the major exporters of meal, while the European Community is the major trader: by far the largest buyer, it is also an important seller.

Expanding Production

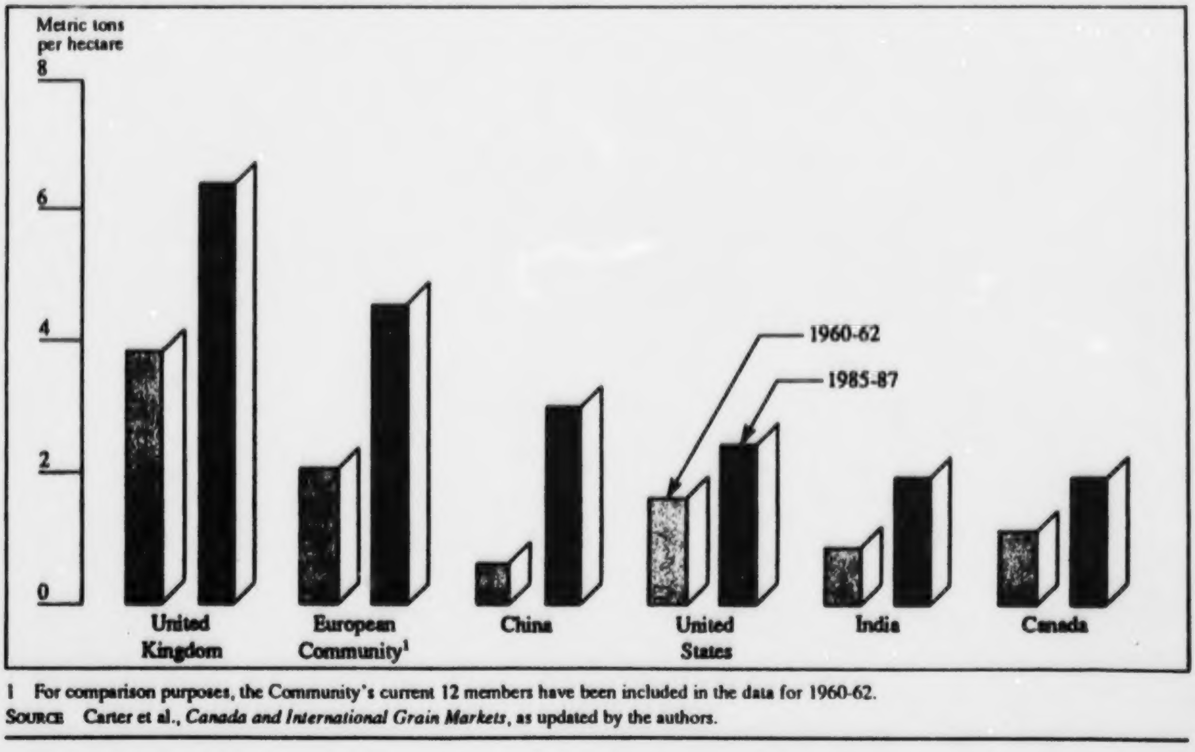
There has been a very large increase in the world output of grains and oilseeds since the Second World War, accompanied by a rise in the traded volumes of these commodities. Between 1960 and 1985, world wheat production more than doubled – from 238 to 503 million metric tons (mmt) – while trade increased about two and a half times, peaking at 116 mmt in 1984 and falling back to between 85 and 100 mmt per annum since then. Over the same period, the production of coarse grains nearly doubled – to around 860 mmt – while trade in those commodities increased about three and a half times. The production of fats and oils also increased rapidly, rising from 29 to 68 mmt. The fastest growth was in oilseed-meal production, which rose by over 200 per cent between 1960 and 1985. Within the fats and oils category, soybeans and canola have grown faster than other oilseed products, while flaxseed production has declined.

The remarkable rise in the world production of grains and oilseeds is the result of increases in the yields rather than in the amount of land brought into cultivation. On a global basis, the area harvested has remained more or less constant, while the yield of wheat, for example, has nearly doubled – from 1.17 metric tons per hectare (mt/ha) in 1960 to 2.19 mt/ha in 1985. All regions have experienced steady increases in wheat production, although the Soviet Union has registered greater year-to-year variability.

Within the overall averages, the yield performances of the various countries and regions have been quite different. Comparing the three-year average for 1960-62 with the 1985-87 level of output, one can see that the European Community (all 12 countries, including those which were not members in 1960) has more than doubled its wheat yields (Chart 2-3). In the United Kingdom, where yields were already high, they increased from 3.6 mt/ha in 1960 to a high of 7.7 mt/ha in 1984. Yields increased much more slowly in the United States and Canada. The most striking changes have occurred in India and China: the production in those two countries, which was well below U.S. and

Chart 2-3

Wheat Yields in Selected Countries, 1960-62 and 1985-87



1 For comparison purposes, the Community's current 12 members have been included in the data for 1960-62.

SOURCE Carter et al., *Canada and International Grain Markets*, as updated by the authors.

Canadian levels in 1960, now equals them and, in the case of China, has even overtaken them.

The dramatic increase in crop yields is largely due to the introduction of high-yielding varieties and to other technological changes, often referred to as the "Green Revolution," which resulted from systematic research carried out in different centres around the world. The impetus for this research came from predictions in the late 1950s that the world would face long-term famine if food supplies did not, at the minimum, keep up with population growth. The developing countries had an additional incentive to increase agricultural production in that, by doing so, they could reduce their need for scarce foreign exchange and become more independent from the major food suppliers.

The introduction of high-yielding varieties was accompanied by increased expenditures on irrigation and on fertilizers and pesticides, as well as by the adoption of new agronomic techniques and by investment in storing and handling facilities. In Western Europe, the already high yields were further increased by the more intensive use of fertilizers and pesticides, in accordance with techniques collectively known as "intensive crop management."

In the developed countries, support prices encouraged farmers to increase their output in order to maintain or raise their incomes. The results of the Common Agricultural Policy adopted by the European Community in the early 1960s are an outstanding example of policy-induced change. Western Europe, whose grain trade is dominated by the 12 members of the Community, was traditionally a net grain importer. As a result of increased local production, the Community registered a swing of approximately 40 mmt in world grain trade over the period from 1960/62 to 1985/86 (see Chart 2-1). Its wheat market share in 1986/87 was estimated at approximately 18 per cent.

The dramatic increase in Chinese wheat production since 1978, which resulted partly from the introduction of price incentives, is even more remarkable than that of the European Community. Chinese production doubled in 10 years from 45 mmt in 1975/76 to 90 mmt in 1986/87. Wheat production in the Soviet Union, on the other hand, experienced wide fluctuations over the 10 years from 1977 to 1986, with output ranging from a high of 121 mmt in 1978/79 to a low of 69 mmt in 1984/85. While there has been no consistent trend, it is generally recognized that the Soviet Union could reduce its import needs very substantially both by increasing yields and by reducing wastage in handling, storage, and transportation. Whether such improvements will occur remains uncertain, but they would appear to be more likely under the current government than under previous administrations.

Meanwhile, farmers in Eastern Europe are adopting intensive crop-management techniques, and more developing countries are expected to follow India and Pakistan's example in substituting domestically grown, high-yielding varieties of grain for imports. This suggests that the world's productive capacity will continue to grow, albeit probably not as fast as it did during the past 25 years.

Policy and technology cannot, however, totally prevail over the weather. Climatic changes still play an important role in agricultural production. That is particularly true in the Soviet Union, which suffers from the least reliable climate of any of the major grain-producing regions. But no country is safe from climatic changes. The 1987/88 decline in world grain production was partly attributable to poor weather in India and China; the drought that affected most of the United States and Canada in 1988 is also expected to reduce the world output of grains and oilseeds.

Changes in Consumption

While certain agricultural commodities, such as flaxseed oil, have industrial uses, most are consumed directly or indirectly as food. Growth in the demand for food depends on population and income growth. Generally speaking, the demand for food rises rapidly with income up to a certain point, then it slows down and levels off (although it may continue to rise in terms of specialty preparations and restaurant meals). As incomes rise, the demand for oils, fats, and red meats also increases, while the proportion of income spent on grains declines. Table 2-1 illustrates the wide disparities between different countries in the per-capita consumption of fats and oils and in the use of oilseed meal for animal consumption. Table 2-2 shows that the demand for coarse grains, which is derived from the demand for animal products, rises with income levels, particularly in those countries where average incomes start from a low point, such as China and India. In most of the countries in the table, on the other hand, the demand for wheat decreases as incomes rise.

In the postwar period, wheat became the staple food of more than one-third of the world's population, replacing lower-protein grains (such as sorghum, rice, and corn) in some developing countries. The growth of world wheat consumption per capita has therefore outpaced population growth, increasing by 60 per cent since 1950. But the fastest increases in consumption and trade have been in fats and oilseeds (for both human and animal consumption), followed by coarse grains for animal feed. There is every reason to believe that this trend will continue as the demand

Table 2-1

Utilization of Fats and Oils, and of 10 Major Oilseed Meals, Selected Countries, 1960, 1970, 1980, and 1985

	1960		1970		1980		1985		Increase, 1960-85	
	Fats and oils	Oilseed meals	Fats and oils	Oilseed meals	Fats and oils	Oilseed meals	Fats and oils	Oilseed meals	Fats and oils	Oilseed meals
				(Kilograms per capita)					(Per cent)	
Canada	25.7	23.0	28.1	38.0	26.3	64.7	31.9	68.0	24.1	195.7
United States	28.5	60.8	32.6	73.1	35.0	87.5	39.1	78.4	37.2	28.9
European Community	28.6	30.2	31.7	51.5	35.4	83.6	38.6	79.0	35.0	161.6
Other Western European countries[1]	22.0	15.7	23.6	38.7	25.8	63.0	27.1	61.8	23.2	293.6
Soviet Union	13.7	9.9	17.7	11.8	20.2	20.9	22.5	22.7	64.2	129.3
Japan	7.0	13.8	9.6	33.1	15.5	38.8	18.5	42.2	164.3	205.8
Brazil	5.9	6.1	8.1	9.0	15.9	28.3	16.5	18.6	179.7	204.9
China	2.5	5.5	2.7	4.1	4.7	6.7	6.1	10.0	144.0	81.8
India	5.8	6.8	5.5	5.6	6.6	5.0	7.2	6.7	24.1	−1.5
Indonesia[2]	2.7	. .	3.2	. .	5.7	. .	8.1	. .	200.0	. .
World	9.6	11.6	10.5	15.1	12.4	20.3	13.1	20.0	36.5	72.4

[1] Spain and Portugal are excluded from the figures for 1985.

[2] Indonesia is not a large user of the 10 major oilseed meals.

SOURCE W. H. Furtan, T. Y. Bayri, R. Gray, and G. G. Storey, *Grain Market Outlook*, Economic Council of Canada (forthcoming).

Table 2-2

Relationship between Income Growth and the Demand for Wheat and Coarse Grains, Selected Countries

	Wheat	Coarse grains
	(Per cent)	
Argentina	0.02	0.65
Australia	–0.27	0.05
Canada	–0.24	0.04
China	0.75	1.69
European Community[1]	–0.37	0.07
Eastern Europe		
Bulgaria	–0.45	0.11
Czechoslovakia	–0.34	0.08
German Democratic Republic	–0.24	0.06
Hungary	–0.26	0.26
Poland	–0.51	0.12
Romania	–0.73	0.18
Yugoslavia	0.08	0.30
India	1.06	2.13
Pakistan	0.62	1.50
Portugal	–0.22	0.31
Spain	0.16	0.13
United States	–0.20	0.04
Soviet Union	–0.42	0.10

[1] Excluding Spain and Portugal.

SOURCE Furtan et al., *Grain Market Outlook.*

for meat increases in the centrally planned and developing economies. By way of illustration, in 1975 meat consumption per capita ranged from 128 kilograms in the United States, 73 kg in the European Community, and 21 kg in Japan to 5 kg in the rest of the Far East. Although many developing countries, particularly in Africa, are still far from having satisfied their demand for grains for human consumption, the greatest increase in effective demand until the end of the century is likely to be for animal feed.

Thus it is not surprising that the use of wheat to feed livestock has increased very rapidly over the past three decades or so. On a global basis, the use of wheat for feed rose from about 25 mmt in 1960 to over 100 mmt in 1986, with the major increases having occurred in the Soviet Union and the European Community (Chart 2-4). The Soviet Union increased its use from just under 10 mmt in 1960 to a peak of over 50 mmt in 1979. Its 1987 level of around 35 mmt represents nearly 40 per cent of Soviet wheat consumption. In the European Community, feed consumption of wheat tripled over the same period. Eastern Europe has been the other major user in recent years, with consumption ranging between 12 and 15 mmt. Thus the three largest consumers account for over 80 per cent of the use of wheat for feed, representing approximately one-fifth of world wheat consumption. The United States has also been an important user of feed wheat in recent years.

Within the global wheat market, the demand for high-quality products is growing very slowly; the demand for medium-quality wheats, on the other hand, is by far the largest and fastest-growing. In our research, we used an international classification of wheat that differs from the familiar Canadian Wheat Board classification. It shows that trade in Class 1 wheat (which includes most of the higher grades produced in western Canada) has been growing much more slowly than trade in Classes 2, 3, and 4, which represent the bulk of the sales of most other wheat exporters. The annual growth rates for the period 1958-81 were:

Class 1: 1.9 per cent;
Class 2: 2.9 per cent;
Class 3: 7.3 per cent; and
Class 4: 4.4 per cent.

Part of this growth pattern reflects the increased use of wheat as feed. A regional breakdown suggests that the shift in trade volumes to medium grades has been more pronounced in the centrally planned and developing economies than in the industrialized countries.

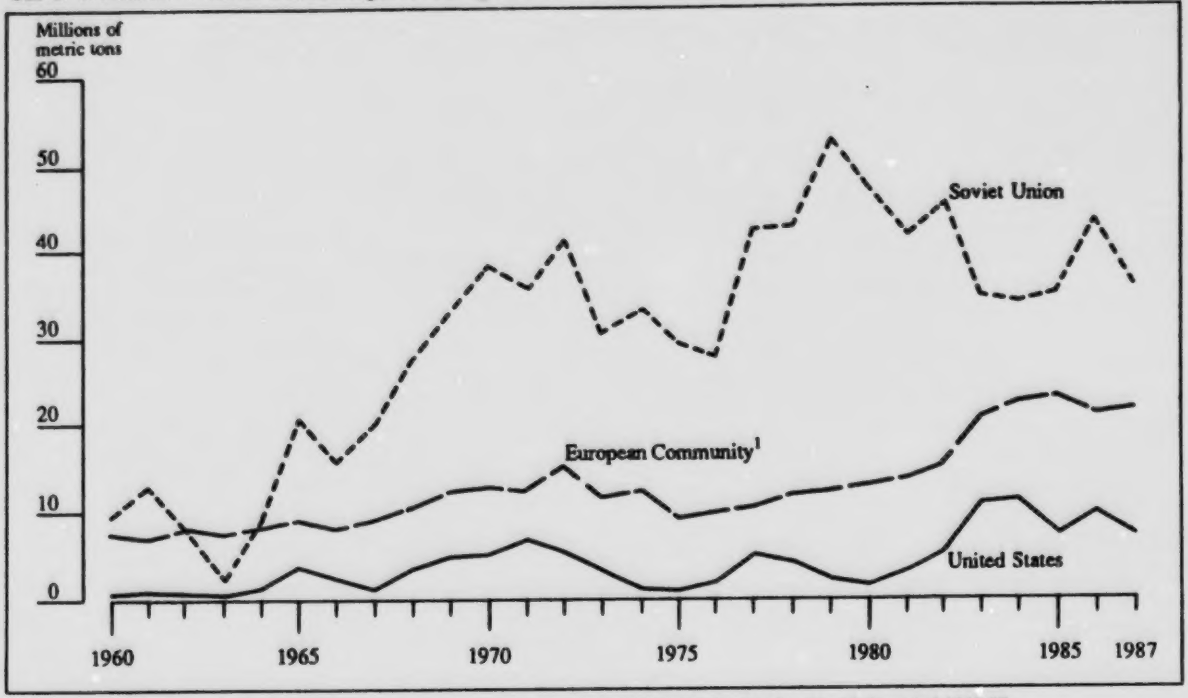
Grain Stocks and Prices

We have already noted that there is a long-term downward trend in the real prices of wheat and other agricultural commodities because agricultural production increases faster than the demand for food. As farmers adopt new production techniques and improve the efficiency with which they use their inputs, output rises and prices fall. Farmers attempt to maintain their incomes by becoming still more efficient, thus reinforcing the downward price trend. Changes in the weather are the main source of short-term price fluctuations. Over the medium term, policy decisions (such as the adoption of the Common Agricultural Policy by the European Community or changes in the U.S. policy with respect to taking land out of cultivation or to subsidizing exports) have major repercussions on world prices.

Grains, unlike other foodstuffs, can be stored at relatively low cost. Changes in stock levels make up the difference between world production and consumption, and they help to reduce price fluctuations. The United States has the

Chart 2-4

Use of Wheat for Feed in Three Major Trading Areas, 1960-87



1 For comparison purposes, the Community's current 12 members have been included in the data for the whole period 1960-87.

SOURCE Carter et al., *Canada and International Grain Markets*, as updated by the authors.

largest grain stocks, with about 40 per cent of the world's wheat and 75 per cent of the world's coarse-grain stocks.

A buildup of stocks indicates that output exceeds consumption, while a rundown signals a shortfall. Normally, these signals would be transmitted through the price mechanism to producers and consumers; they, in turn, would adjust their output and consumption accordingly. Although climatic factors sometimes prevent producers from responding to market signals, the greatest obstacles to adjustment have been price supports and other forms of government intervention, which have obscured those signals. On the consumption side, many (if not all) countries have tariff or nontariff barriers protecting domestic producers and preventing consumers from benefiting from price reductions in world markets.

There are equally important artificial incentives or barriers on the production side. The U.S. farm bills are a good illustration. Recent bills guarantee American farmers a "target price" that is above the market price, provided they agree to set aside a predetermined share of their farmland. The U.S. government also sets a "loan rate," or minimum price. If the loan rate is above the international market-clearing price, the government must buy up domestic production at that rate and add it to its stocks. It makes up the difference between the loan rate and the target price by remitting deficiency payments to farmers. The loan rate thus becomes the world floor price for wheat and coarse grains.

Stock buildups resulting from widespread intervention in the market are not immediately translated into lower prices. In fact, experience shows a complex relationship between stock levels and grain prices. The impact of changes in stock levels is much stronger within certain critical ranges than within others. Our research suggests, for example, that when wheat stocks are around 20 per cent of total consumption and coarse grains are around 16 per cent, small changes in stocks lead to significant price changes.

The Outlook for Grains

Research prepared for the Council has estimated the supply of, and demand for, wheat and coarse grains until 1995 on the basis of expected population and income growth in 13 countries and regions of the world (Table 2-3).

There was a very high buildup of stocks in the first half of the 1980s. Wheat stocks rose from 18 per cent of consumption in 1980/81 to over 28 per cent in 1985/86. The situation in coarse grains was similar, with world production being well above consumption and with stocks reaching about 26 per cent of consumption in early 1988. These levels, which led to a decline in prices in 1986 and 1987, suggested that producing countries might try to stabilize their output at volumes below their trend level until the early 1990s, when stocks were expected to fall to the critical ranges. Significant price increases would then occur.

Table 2-3

World Production, Consumption, Trade, and Year-End Stocks of Wheat and Coarse Grains, 1985, 1990, and 1995: The Most Likely Scenario

	Actual,	Projected	
	1985	1990	1995
		(Millions of metric tons)	
Wheat			
Production	500.0	543.0	572.0
Consumption	487.6	542.4	606.5
Trade[1]	84.6	84.7	126.8
Year-end stocks	136.9	153.0	63.6
		(Per cent)	
Stocks as a proportion of consumption	28.1	28.0	10.0
		(Millions of metric tons)	
Coarse grains			
Production	845.8	836.2	943.2
Consumption	770.6	862.5	962.0
Trade[1]	83.4	77.9	93.0
Year-end stocks	183.0	152.7	81.0
		(Per cent)	
Stocks as a proportion of consumption	23.8	18.0	8.0

[1] Exports required to meet import demand.

SOURCE Furtan et al., *Grain Market Outlook*.

The 1988 drought in North America has altered the short-term outlook, however. World consumption will exceed production in the 1987/88 crop year, and stocks are expected to decline sharply until 1989. Prices for wheat and, in particular, for barley and oats are now rising. If 1989 were to bring another major drought, wheat stocks would probably fall below 20 per cent of consumption.

In the absence of a repeated drought, however, grain production is likely to equal or even exceed consumption in 1989. The 1988 decision by the United States to decrease its "acreage set-aside" program reinforces that probability. In the absence of major changes in government support policies in the principal exporting countries, stocks will probably remain above the critical ranges in the early 1990s, keeping prices weak. Accurate agricultural forecasting is, however, notoriously difficult. Both climatic and policy changes are unpredictable. That is particularly true of policy in the centrally planned economies, as the example of two possible scenarios for wheat production and consumption in China illustrates.

China: An Example of the Difficulty of Forecasting

China, the world's largest consumer of wheat, presents a major challenge to agricultural forecasters. Crop yields, income, and consumption have all risen so rapidly in the last 10 years that one cannot rely on estimates based on past trends. We have already mentioned the jump in yields. On the demand side, consumption is estimated to have increased by 7 per cent annually in the 1970s and by 6 per cent per year in the 1980s. Both future consumption, based on population and income, and future production are uncertain. But it is believed that most of the potential gain in yields has already been captured. The Chinese "cropping index" (the ratio of harvested area to arable land) is already one of the highest in the world. A continuation of recent patterns of income growth and consumption would therefore suggest that China will have to import massive quantities of both wheat and coarse grains during the 1990s. But foreign-exchange constraints, as well as limited handling and transportation facilities, are likely to force China to choose between alternative import scenarios. In addition, there is always the possibility that another radical change in national policies might slow down income growth. Our forecasts are based on the assumption that China will increase its imports of wheat rather than of coarse grains. Logistically, it is easier to supply the large coastal cities with imported wheat than to devote scarce transportation facilities to bringing them domestic grains.

The most likely scenario is that Chinese production will rise to around 107 mmt and consumption to around 141 mmt in 1995, giving rise to an import demand of 34 mmt (Chart 2-5). But other scenarios, based on plausible developments, would lead to an import demand of 64 mmt in 1995 – in the case of low production and high consumption – and of 26 mmt under the reverse assumption. In any event, China is likely to be the major customer on the international wheat market in the late 1990s.

Summary

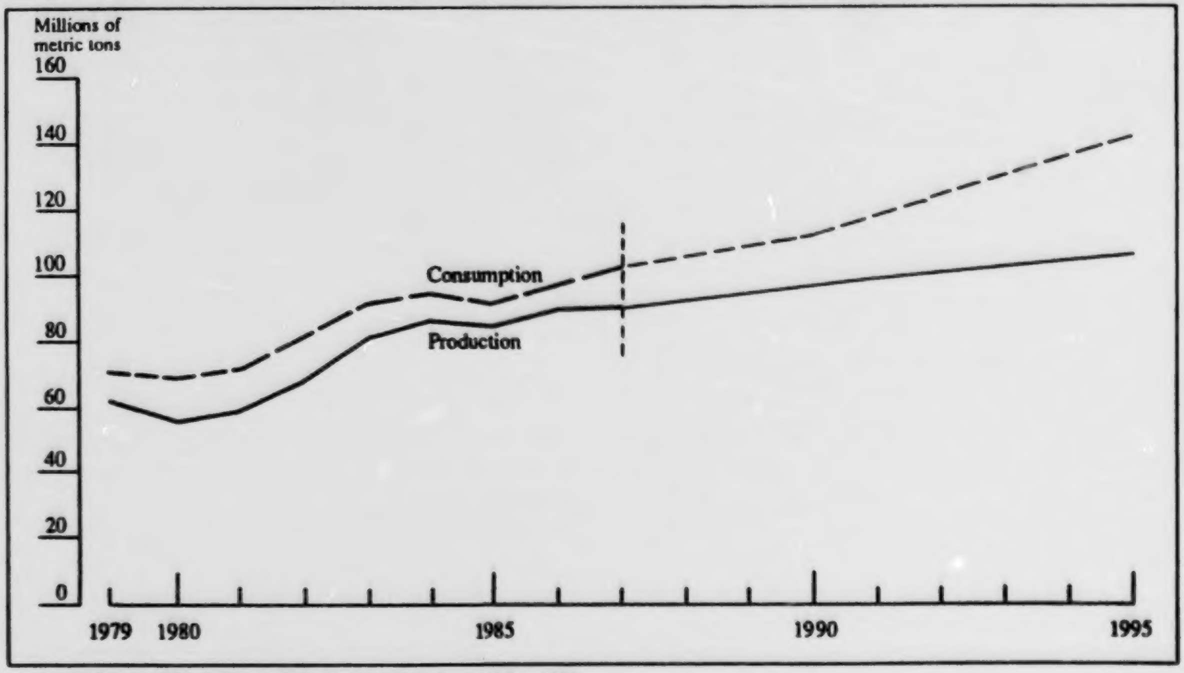
There have been major changes in the configuration of the grain and oilseed trade over the two and a half decades with regard to both actors and commodities. On the production side, the European Community, China, India, and a few other developing countries have recorded remarkable successes. Earlier fears of scarcity and long-term shortages have not materialized, thanks to both the increased output worldwide and the lack of purchasing power and import capacity in countries suffering from deficits in food and feed grains.

The demand for grain and oilseeds is determined by eating habits, income levels, and population growth. It is growing faster for feed wheat, coarse grains, and oilseeds than for high-protein wheat. Japan remains an important buyer of wheat and coarse grains, but most of the other major developed countries have become self-sufficient; several are now exporters of those commodities. This means that the developing countries and the centrally planned economies are the main customers for grains. The European countries are currently the major importers of oilseeds, but their relative importance could change rapidly as incomes rise in Asia.

The most probable outlook for the world market over the next eight years is for the production and consumption of wheat and coarse grains to converge during the first half of the 1990s. The consequent price increases are likely to lead

Chart 2-5

Wheat Production and Consumption in China, 1979-95:[1] The Most Likely Scenario



1 Actual data to 1987, and projections by the authors from 1988 to 1995.

SOURCE W. H. Furtan, T. Y. Bayri, R. Gray, and G. G. Storey, *Grain Market Outlook*, Economic Council of Canada (forthcoming); and U.S. Department of Agriculture, Foreign Agricultural Service, *World Grain Situation and Outlook*, August 1987 and 1988.

to another cyclical upswing in the world grain trade, followed (on the basis of historical experience) by a downturn. Changes in weather and in policy will influence the timing of the different phases of the cycle.

However difficult it may be to pinpoint specific levels of output, consumption, stocks, and prices, the evidence available does suggest strongly that the productive capacity of the developed countries will continue to outstrip not only their own domestic demand but also the effective demand in both the developing countries and the centrally planned economies in the foreseeable future. Since technological progress increases output faster than rising incomes increase consumption, the returns to agricultural producers do not keep up with their costs. This leads them to try to maintain relative income levels by further increasing their output. Inevitably, governments then feel compelled to intervene in order to control stocks and dispose of them.

3 The International Policy Scene

Agriculture provides a prime example of the growing interdependence of the world's economies. Almost all nations pursue active agricultural or food-supply policies whose effects spill over into the international arena. At the same time, exchange rates, interest rates, and the level of economic activity in the major industrialized countries have widespread effects on the relative prices of agricultural imports, on the costs of agricultural production, and on the volume of trade in agricultural commodities.

Individual countries support agriculture in response to domestic concerns, such as the need for secure supplies of food, the desire to assure farmers a standard of living comparable to that of city dwellers, and a fear of depopulating the countryside. National farm-support policies tend to increase the volume of production of agricultural commodities. That has direct repercussions on world trade, largely because agriculture is exempted from two of the most important articles of the General Agreement on Tariffs and Trade.

Both Article XI of the General Agreement, which forbids the use of import quotas, and Article XVI, which limits the use of export subsidies, effectively exclude trade in agricultural commodities. These loopholes were deliberately written into the agreement in the late 1940s and the 1950s, at the insistence of American farm interests – a fact that other countries have not let the U.S. government forget. In 1955, the exemption from Article XI was widened still further for American farmers when the United States secured a waiver enabling it to limit the importation of certain commodities without imposing corresponding controls on the domestic production and marketing of the restricted products. In the current round of multilateral trade negotiations, the contracting parties to the General Agreement have agreed to bring agricultural trade into the GATT system. This is proving to be difficult, however, because of the importance that various countries attach to their farm policies, which have developed outside GATT rules.

International cooperation in agriculture must also take account of the increased sensitivity of agricultural trade to changes in macroeconomic variables. The move from fixed to floating exchange rates in the early 1970s, for instance, had a very significant impact on relative agricultural prices. Trade in the major unprocessed commodities (including grain) is priced in U.S. dollars, while producers and traders within the various national markets operate in their local currencies. As a result, the price received by local producers reflects not only the current world price in U.S. dollars but also the exchange rate between the currency of their country and the U.S. dollar. Given the large swings in relative currency values over the past 15 years, commodity prices have sometimes been falling in some currencies while rising in others. For example, while the world price of wheat was declining sharply in the early 1980s for American farmers, whose costs and receipts are denominated in U.S. dollars, it was rising in domestic currencies for West German, British, and French producers, as a result of the higher value of the dollar.

Exchange-rate movements affect the levels of protection provided by different national policies. As Hathaway has shown,[1] when the exchange rate between the U.S. dollar and the European currency unit (ECU) reached its peak in 1984-85, the internal prices of agricultural products under the European Community's Common Agricultural Policy (CAP) were only moderately above world dollar prices, and the cost of export subsidies per unit of product fell, without a corresponding reduction in internal prices. Conversely, when the U.S. dollar declined in early 1985, the cost of maintaining the same level of farm support under the CAP rose sharply, even though some domestic European prices had declined.

Inflation and real interest rates have also affected agricultural production and trade in the last 10 years. Strong inflationary forces and low interest rates fueled the expansion of agricultural output in the 1970s, and the accumulation of stocks was not considered worrisome when stock holding was relatively cheap. But the return to high real interest rates and the worldwide dampening of demand in the early 1980s made stock holding more onerous and compounded the financial difficulties of farmers who had borrowed heavily to finance capital-intensive production.

National governments have tried to insulate their farm sectors from climate-induced variations in supply and demand and from the effects of currency fluctuations. But in so doing, they have increased instability in the international market. Thus it is important to consider the roles played by two of the main actors in the international grain trade – the United States and the European Community.

The Role of the United States

The farm policy of the United States is critical to world markets. Not only is that country the main international supplier of wheat, corn, and soybeans, it is also a major player in other important agricultural markets, such as those for rice, red meat, cotton, and citrus fruits. The key instrument of U.S. agricultural policy is the farm bill, which is extended or modified approximately every four years. The bills adopted in 1973 and 1977 set target prices for many agricultural commodities above their loan rates and provided for deficiency payments to make up any difference between market prices and the target prices. As world grain prices remained above the target prices, this safety net was not needed.

In 1980, when a new farm bill was being drawn up, the U.S. dollar was at an all-time low against the currencies of the United States' major trading partners. U.S. grain exports priced in dollars appeared to be relatively cheap, and the grain market seemed strong. Although the underlying demand was already weakening, U.S. policy makers ignored the possibility of a contraction in the market. The 1981 farm bill not only raised the target prices and the loan rates – i.e., the prices at which farmers could sell their crops to the government – but it also pegged the increases in the target prices to the then-current inflation rate of about 10 per cent and prevented the Secretary of Agriculture from lowering the loan rates. In retrospect, it is likely that the members of the Congress believed they were simply adjusting the safety net to take account of the higher rates of inflation. If the 1980s had been a continuation of the 1970s – with rapid growth, rising prices, easy money, and a declining dollar – the 1981 farm bill might well have been viewed as being as successful as its two predecessors.

But things changed radically. The switch to tight money in October 1981 and the subsequent global recession reduced demand for agricultural imports, particularly in the developing countries. This contraction coincided with the expansion of European grain production. The appreciation of the U.S. dollar in the early 1980s made U.S. grain less competitive in those weak markets. As a result, the U.S. share of the world wheat market fell from 48 per cent in 1981/82 to a low of 25 per cent in 1985/86.

Producers in the United States – who saw that wheat production had risen in Canada, Australia, Argentina, and the European Community in the early 1980s, while their share of the market had fallen – believed that they had been taken advantage of. They attributed their loss of market share not to the fixed loan rate in the 1981 farm bill or to the appreciation of the dollar but to price undercutting by their competitors. Accordingly, they demanded corrective action from the Congress and from the Administration.

The farm bill adopted in 1985 made drastic changes in U.S. farm policy. Loan rates were lowered immediately, and further reductions of up to 10 per cent per year were provided for. Some modest reductions were made in the target prices, effective in 1988. More importantly, the new farm bill gave the Secretary of Agriculture the discretion to reduce loan rates still further – by up to 20 per cent – when stocks are high. As a result, the loan rates for a number of commodities (including wheat, feed grains, soybeans, cotton, and rice) fell by more than 25 per cent. The loan rate for wheat, for example, dropped from US$3.30 to US$2.40 per bushel.

An important new element of the farm bill was a greatly expanded Export Enhancement Program (EEP), which provided for payment-in-kind export subsidies. Initially, the EEP was aimed at markets in which the European Community was perceived to be undercutting U.S. sales, but by the end of 1986 it had become a general program subsidizing U.S. exports to a large number of importing countries. These included China and the Soviet Union, which received 4 mmt and 9 mmt, respectively, of EEP-subsidized wheat in 1987, largely at the expense of Canadian sales. In 1986/87, 50 per cent of U.S. wheat sales were made under the EEP.

With the announcement of the new farm bill in December 1985, prices in the United States and in world markets fell sharply. Since then, the volume of U.S. wheat exports and the U.S. share of the world market have increased. Exports reached about 43.5 mmt in 1987/88, which represents more than 40 per cent of the world market. Farm groups and grain traders in the United States believe that the aggressive stance adopted in the 1985 farm bill has paid off.

The value of these wheat sales has not recovered to nearly the same extent, however. In subsidizing exports, the United States increased supply and drove down prices; but the lower prices did not lead to a proportionate increase in wheat sales. In addition, the recovery in U.S. exports came slowly and was smaller than expected, given the 37-per-cent reduction in loan rates. That was partly attributable to the fact that other exporters reacted to the change in U.S. policy by protecting their producers from the impact of the decline in prices.

The government of Argentina, which traditionally raises revenue through an export tax on wheat, first lowered the tax from 15 to 5 per cent in May 1986, then eliminated it altogether in 1987. In so doing, the government was attempting to protect Argentina's share of the world market by shifting part of the cost of adjusting to the new U.S. policy from Argentina's farmers to the national treasury.

Canada's policy response to the move by the United States to recapture a larger market share came in two parts. The Canadian Wheat Board's decision to lower initial payments to farmers by $30 per tonne in 1986/87 and by $20 per tonne in 1987/88 forced farmers to bear the adjustment costs. At the same time, however, the federal government introduced the Special Canadian Grains Program in December 1986 as a one-time deficiency payment of $1 billion to "cushion the impact of the subsidy war between the European Economic Community and the United States." A second set of payments (totalling $1.1 billion) was announced in December 1987. Ottawa also took over the deficits in the Canadian Wheat Board's pooled accounts and part of the deficit in the Western Grain Stabilization Fund, which together totalled more than the special deficiency payments. A significant portion of the cost of adjustment was thereby shifted from the Canadian Wheat Board and the farmers to the federal government.

The European Community did not materially alter its policies as a result of the 1985 farm bill, although there were modest reductions in guaranteed prices for 1987. But the increased costs of making up the difference between guaranteed domestic prices and reduced export prices precipitated a budget crisis early in 1988. The shortfall was made up by increasing public expenditures.

In Australia, the Wheat Board immediately lowered its prices when the 1985 farm bill was announced in the United States, but the government did little to compensate Australian farmers for the reduced prices of wheat, barley, sugar, rice, and cotton. Some producers were able to recoup their losses by switching to wool and meat, for which world prices were rising; others suffered serious hardship.

The defensive reactions to the 1985 farm bill had apparently not been anticipated by the United States, which had hoped that competing exporters would allow it to recover its share of the world wheat market and expected that higher export volumes would compensate for the lower prices. Only Australia seems to have fulfilled those expectations, however, as other exporting countries took measures to defend their sales abroad.

This outcome led to a second round of aggressive export subsidization by the United States, which again lowered the loan rate for wheat and increased the allocation of funds to the EEP. This program now covers U.S. sales to virtually all foreign markets and was used actively up to July 1988, even though wheat prices were rising and stocks were declining. In addition, the United States decided to increase output by more than halving the acreage that farmers must set aside to be eligible for the target price. Thus the United States seems determined to recapture the market share that it held briefly in the early 1980s.

The Common Agricultural Policy of the European Community

The 1957 Treaty of Rome, which established the European Economic Community, contained the seeds of what was to become the Common Agricultural Policy. Since the early 1960s, the CAP has played a growing economic and political role in the member countries. Its original aims were to assure Community consumers secure food supplies and to provide decent living standards for the approximately 15 million people employed in agriculture in the EEC's six member countries in 1960.[2]

These objectives of the CAP are still widely endorsed by the member states, almost all of which had suffered from severe food shortages during the Second World War. The promotion of regional development, the protection of the environment, and the prevention of rural depopulation have more recently been invoked to support the CAP.

At the beginning of the marketing year, the Community sets the price for each commodity covered by the CAP. If output exceeds demand, the Community intervenes to buy up the surplus, which it either holds in stock or (more recently) disposes of by subsidizing exporters through "restitution payments." Lower-cost imports are kept out by means of variable tariffs (or "levies"), which raise the prices of competing foreign goods to the level of the Community price.

One of the CAP's major challenges was to establish common prices for each agricultural commodity, despite the wide differences in farm sizes and productivity levels between the Community's member states. (This problem was recently compounded by the accession of Greece, Spain, and Portugal, which resulted in nearly doubling the number of farms of less than 20 hectares from 4.3 million to 7.6 million.) Not surprisingly, guaranteed prices high enough to cover the costs of the least efficient producers led the more efficient ones to increase their output. As a result, the Community has gradually moved from being a major grain importer to being the third largest exporter.

In the process, the cost of the Common Agricultural Policy has grown. In its early years, import levies largely paid for restitution payments. As imports of grain declined, however, restitution payments had to be paid from the public purse. Falling prices exacerbated the problem. Expenditures on CAP programs now take up about 70 per cent of the Community's budget, or an estimated $46.5 billion for 1987/88. In addition, the 12 national governments spend a comparable sum on their own farm-support programs. Estimates also suggest that in terms of higher prices to consumers, the indirect costs of agricultural support may be equal to, if not greater than, the Community's budgetary costs.

Nonetheless, the CAP has generally been regarded as a highly successful program. Citizens of the European Community's member states can be more confident today than at any time in the past century that their food supplies are secure. With the exception of tropical products and high-protein livestock feed, the Community is now self-sufficient in food commodities. There have also been major improvements in productivity. Although, on average, its residents spend proportionately more of their income on food – 21 per cent for the Community as a whole – than do North Americans, the Community points out that over the past 25 years, food prices have risen less than overall consumer prices in its member states. In addition, farm incomes are now more stable than in most other parts of the world, and they have risen significantly in some member countries. These results have led regions that were cool towards the common market to rally behind it – in the United Kingdom, for example, where the farm lobbies now number among the European Community's most enthusiastic supporters.

Nonetheless, the Community is gradually facing up to the need to modify its agricultural policy. Member states acknowledge that the enormous increase in the Community's agricultural production is one of the factors distorting world trade and that it has absorbed an ever higher portion of its budgetary expenditures. Over the past four years (most recently in February 1988), the member states have taken a number of steps to change the signals that they are sending to their farmers. Those steps include voluntary "acreage set-aside" programs, pre-retirement incentives for farmers aged 55 and over, and production ceilings for most of the major commodities.

Grain production above the ceiling is penalized by both a 3-per-cent tax on the excess and a 3-per-cent reduction in the guaranteed price for the overproduced commodities. These measures constitute a major policy change. The CAP previously maintained the price guaranteed at the beginning of the marketing year, regardless of the quantity produced.

To be politically acceptable, the production ceiling for grain was set in early 1988 at 160 mmt – an amount higher than current output. Although that ceiling is well below the best harvest in 1984/85 and is 25 mmt less than the output being forecast for the early 1990s, it remains far too high in the eyes of the Community's trade competitors. Canada's Minister of Grains and Oilseeds attacked the 160-mmt ceiling on grains, on the grounds that it will increase the surplus on world markets since it is above the production level anticipated for 1987/88 and exceeds the Community's grain consumption by 20 mmt.

The Effects of Intervention in World Grain Markets

The main beneficiaries of farm-income and farm-export support programs are the treasuries of the importing countries, for which the U.S. loan rate and export subsidies, the European Community's restitution payments, and Canada's deficiency payments represent net income transfers. Consumers in some developing countries may reap temporary gains from cheaper imports, but those gains are often illusory. Short-term imports of subsidized food distort the local market and discourage improvement in domestic agriculture, leading to even more-severe shortages when the dumped supplies are no longer available. Indeed, in general, consumers in countries that import agricultural commodities (including Japan, China, and the Soviet Union) appear to benefit very little, if at all, from the subsidization of these commodities by the exporting countries.

Export subsidies and deficiency payments can be expected to accelerate the secular decline in grain prices while increasing price volatility in the international market, as each country attempts to stabilize the incomes of its own farmers, thereby distorting the relationship that would exist between competitive prices and output.

The competition for grain markets is often expressed in terms of a certain share of the total volume traded. This competition is encouraged by the formulation of Article XVI of the GATT, which governs export subsidies. Article XVI prohibits the subsidization of primary exports "in a manner which results in [a] contracting party having more than an equitable share of world export trade in that product, account being taken of the shares of contracting parties in such trade in the product during a previous representative period." Thus each exporting country has a stake in establishing a record of sales at the highest sustainable level. At present, it appears that the two major exporters – the United States and the European Community – are seeking to expand and to maintain, respectively, their shares of the world wheat trade. If successful, this endeavour will reduce the shares held by three other long-time exporters – Canada, Australia, and Argentina.

The competition for market shares is particularly damaging for Canada, which is much more dependent on wheat exports than either the United States or the European Community. Production alternatives are more limited in the Prairie provinces (particularly in Saskatchewan) than in the two larger markets (with the possible exception of Kansas in the United States). Australia and Argentina also export a large proportion of their wheat (although that proportion is lower than Canada's), but each has more opportunities for diversifying into other agricultural activities – notably, into livestock in Australia and into beef and soybeans in Argentina. Canada's policy of establishing itself as a reliable supplier of high-quality wheat depends on maintaining a fairly constant market share. But Canada does not have the fiscal capacity to rival U.S. and European subsidies over the long run, nor can it change this hostile environment alone. So, while clearly signaling that Canada is unwilling to give up its market share, the federal government is playing an active role in current attempts to liberalize trade in agricultural commodities within the GATT framework.

Trade Liberalization

The seven rounds of trade negotiations that have taken place since the General Agreement was signed in 1947 have left national agricultural policies largely untouched. Indeed, the distortions in agricultural markets that arise from national farm programs have increased significantly in the 1980s. Until recently, the accepted wisdom was that farm programs were too closely linked to each country's social policies to be negotiable under the GATT. But when the current round of multilateral negotiations was launched at Punta del Este, Uruguay, in 1986, the contracting parties agreed that:

> Negotiations shall aim to achieve greater liberalization of trade in agriculture and bring all measures affecting import access and export competition under strengthened and more operationally effective GATT rules and disciplines, taking into account the general principles governing the negotiations, by:
>
> (i) improving market access through, *inter alia*, the reduction of import barriers;
>
> (ii) improving the competitive environment by increasing discipline on the use of all direct and indirect subsidies and other measures affecting directly or indirectly agricultural trade, including the phased reduction of their negative effects and dealing with their causes.

The mid-term review of the Uruguay Round in December 1988 will show whether this commitment has been sustained.

The multilateral reduction of barriers to agricultural trade is difficult, first, because the trade-distorting effects of the barriers are often the unintended consequences of a nation's political and social policies. Health and hygiene standards, soil-conservation measures, and income-support policies are adopted for domestic reasons, but they also have an impact on trade. Governments are not prepared to abandon these policies. In the long run, successful trade liberalization depends on finding ways to maintain the desired domestic policies while eliminating or reducing their negative effects on trade. In the short run, measuring the impact of these policies and programs on international trade is a major problem for the negotiators.

The "producer-subsidy equivalent" (PSE) is one possible measure developed by experts of the Organisation for Economic Co-operation and Development (OECD). It expresses the level of income assistance that producers get from a particular agricultural program by adding program expenditures to market incomes and calculating the share of the total that is attributable to the program. The PSEs from each program are then weighted and added, to give a total national measure. Table 3-1 shows the recent increase in PSEs in five countries, for the commodities of greatest interest to Prairie farmers. The Special Canadian Grains Program is the principal reason for the abrupt jump in the Canadian figure for grains between 1984 and 1986.

The PSE is not only difficult to calculate; it can also be misleading, by suggesting that expenditures on broadly based agricultural programs (such as research and development) distort trade in the same way as export subsidies. This has led Canada to suggest that for the purposes of the GATT negotiations, the programs be divided into three categories, according to their effects on trade: nondistorting, partially distorting, and fully distorting. Only trade-distorting measures would be the subject of negotiations.

Another obstacle to successful trade negotiations is the high visibility of the negative effects of reducing farm support, compared with the low visibility of the benefits. As a result, support for liberalization is not as widespread as a first reading of the situation might suggest. Consumer support for trade liberalization is relatively weak even in Japan and the European Community, where consumers pay higher prices for food, because of the tariff protection enjoyed by farmers, and devote a larger share of their income to food purchases. There is more support for trade liberalization where consumers pay higher taxes for direct

Table 3-1

Estimated Producer-Subsidy Equivalents,[1] Selected Farm Commodities and Countries, 1982, 1984, and 1986

	Canada	United States	European Community[2]	Australia	Japan
			(Per cent)		
Wheat					
1982	18.4	16.0	34.2	15.3	93.4
1984	29.7	32.2	12.8	7.3	94.5
1986	51.8	64.3	61.3	21.2	102.3
Coarse grains					
1982	22.7	12.1	17.3	8.7	97.9
1984	20.2	17.9	7.8	5.6	96.0
1986	63.2	51.0	51.7	9.2	101.6
Total livestock					
1982	30.9	20.0	32.8	17.3	38.4
1984	37.4	24.7	36.7	15.3	43.5
1986	39.3	27.0	45.4	14.1	52.3
All products					
1982	25.8	17.1	32.6	16.6	59.4
1984	31.9	23.3	31.4	12.8	64.9
1986	45.7	35.4	49.3	15.3	75.0

1 PSEs measure the share of the sum of market income and program-support income that is attributable to program support alone.

2 Excluding Spain and Portugal.

SOURCE Organisation for Economic Co-operation and Development, "Report on monitoring and outlook of agricultural policies, markets and trade," Paris, May 1988, mimeo.

farm subsidies. Yet agricultural production has led to unprecedented levels of expenditure in recent years, without provoking widespread protests. For example, in 1981 it was argued that spending more than US$5 billion on agricultural support programs would not be tolerated in the United States, but the federal government spent between $25 billion and $30 billion in payments-in-kind in 1983 and $26 billion in direct support in 1985/86.

Many observers are skeptical about the benefits that can be expected from trade liberalization. Nevertheless, our review of world trade models shows a clear welfare gain to the world economy from the dismantling of agricultural protection. Not only consumers and taxpayers, but also farmers in those parts of the world which enjoy a comparative advantage in agricultural production, would benefit from the removal of trade distortions.

But there are doubts as to both the reliability of the models and the likelihood of general trade liberalization ever taking place. Many analysts believe that the imposition and the removal of trade barriers have asymmetrical effects: while domestic protection stimulates production, its removal may not necessarily lead to an equal reduction in output. That asymmetry may be attributable not only to sunk costs but also to technical advances and to the learning process, which may make it possible for previously uncompetitive producers to continue to supply a liberalized market. This means that an even greater adjustment is required to reduce the volume of output.

Government transfers have maintained farm incomes far above their market levels in many countries. As a result, market prices in a liberalized trading system would have to rise quite significantly in order to provide farmers with equivalent returns. Alternatively, the welfare gains from lower budgetary and consumer expenditures would have to be readily available to compensate farmers for the loss of those transfers. To give an idea of the magnitudes involved: the world price for wheat in the spring of 1988 was about US$3.00 per bushel, while the guaranteed target price in the United States was US$4.24 per bushel – a subsidy of over 40 per cent. In comparison, the increases expected (over the prices that prevailed in the early 1980s) from overall trade liberalization range between 5 and 27 per cent. Recall, also, that even in countries with the most efficient agriculture, there are some farm groups that would lose from trade liberalization.

A further problem for the negotiators is that in both the United States and the European Community, the political responsibility for agricultural trade policy is shared. In the United States, the Congress develops the farm bill (the current bill is scheduled to be revised in 1991), while the Administration negotiates within the GATT. Although the current Administration is firmly committed to liberalizing agricultural trade, farm groups – which are well represented in the Congress – have serious reservations. In the European Community, it took a major political effort to change policy direction and to put ceilings on agricultural support in February 1988. Completing the internal Community market by 1992, as planned, will require a considerable amount of political energy, and the European Commission will not find it easy to mobilize support for far-reaching changes in agricultural policy in the near future.

Canada's Interests

Prairie farmers and Canadian taxpayers in general are likely to benefit from trade liberalization. The elimination of grain export subsidies in the United States and the European Community would increase market access. The reduction of import levies in the Community would give Canada an opportunity to recover some of its former European sales of high-grade wheat. The reduction of tariffs on oilseed products would also enable Canada to increase the value-added of its agricultural exports. Finally, the "binding" of liberalization measures under the GATT – that is, the commitment by the contracting parties not to raise trade barriers – would reduce that portion of price volatility which is induced by national policy changes. Since Canadian grain producers do not traditionally depend on a predetermined level of price support, they are more likely to gain from even a small rise in world market prices than are their American and European counterparts, whose incomes have, in recent years, been maintained above market prices by the systems of target prices and restitution payments.

The dismantling of all intervention in grain production would, however, increase U.S. output once idle land was brought back into cultivation, thus increasing the level of world production. It might also require that Canada modify some of its support programs.

According to a study prepared for the Council, Canada is one of the few OECD countries where producers (taken as a whole) would suffer the least and might even gain if all of the industrialized countries liberalized their agricultural trade. But total trade liberalization is not expected to be the actual outcome of the current round of negotiations. A partial reduction of trade distortions is more likely; research done for the Council shows that it could give rise to significant gains to Prairie producers in terms of improved access to markets and more stable prices.

The Negotiations

The four major actors in the agricultural negotiations – the United States, the European Community, Japan, and the Cairns Group (which is made up of 13 small and medium-sized grain-exporting countries, both developing and developed, including three major wheat exporters – Canada, Australia, and Argentina) tabled their proposals in the summer and fall of 1987. The U.S. proposal, which is the most ambitious, outlines a 10-year liberalization program, in two parts: 1) agreement on the PSE as a general measure of government support and on a timetable for reduction; and 2) a phasing-out of all subsidies, quotas, tariffs, and other import barriers by the year 2000. But while the European Community and Japan acknowledge the need to reform agricultural trade, they are not convinced that it is either possible or necessary to eliminate all farm programs that impact on international trade.

The Europeans would prefer to get agreement on more-modest, short-term steps – such as one-year emergency measures to deal with oversupply in grains, sugar, and dairy products – and on a commitment to stop the exacerbation of existing imbalances. They would postpone a concerted reduction in trade-distorting measures until adjustment programs had been worked out. They agree that the PSE may be a useful measure, but they put more emphasis on enforcing the existing GATT rules that govern export subsidies than on developing new instruments and measures.

Japan has recently shown a new willingness to reduce protectionist measures in the beef and citrus industries, and it is committed to the process of multilateral trade negotiations. The Japanese are opposed to the use of PSEs to measure trade barriers, however, and they are looking for special consideration to be given to countries, such as their own, that depend on imported foodstuffs.

The Cairns Group has drawn up detailed proposals for immediate, short-term, and long-term liberalization measures. These include: an immediate freeze on new trade-distorting measures; a phasing-out of all trade-distorting support programs; respect for GATT rules on subsidies and access to markets; and the creation of a strong monitoring and surveillance mechanism.

While all of the OECD countries are officially committed to comprehensive liberalization measures, progress has been very slow to date, and some fear that the opportunity for reform will be missed. There is still no agreement on a framework for agricultural negotiations. In the past, the GATT has used the "request and offer" procedure, under which countries put forward a set of demands and concessions. The objective is to develop an agreed-upon overall package, which is "bound" when the contracting parties make a commitment to respect it. Alternatively, negotiations could be conducted on a commodity basis, as they were in the Tokyo Round. The United States and the Cairns Group, however, want to include all forms of trade-distorting agricultural support to all commodities in the negotiations, as stated in the Punta del Este Declaration. The United States, in particular, insists on a comprehensive negotiation with a precise target date – a position that is referred to as "zero 2000." Because of the strength and diversity of the farm lobbies in the United States – which cover major commodities as different as cotton, sugar, grains, and dairy products – the Administration will need a large package of trade-liberalization measures in order to be able to spread out the gains and losses equitably and in an acceptable manner.

The outlook is unpredictable. Japan and the European Community have made changes in their agricultural policies that would have been almost unthinkable even five years ago. Moreover, this is the first round of GATT negotiations in which agriculture is among the two or three principal subjects on the agenda, receiving the attention of finance ministers and heads of governments, as well as of ministers of agriculture and industry lobbies. Yet progress is imperceptible to the outside observer. Rising grain prices have reduced some of the pressure to improve trading conditions in this sector, and as the mid-term review of the Uruguay Round approaches, a negotiating framework has yet to be agreed upon.

In the meantime, it is apparent that many, if not all, governments are determined to continue to support their farmers in one way or another. Conscious of that fact, trade negotiators and agricultural experts are looking for programs that will have minimal trade-distorting effects.

4 Canada's Role in the Grain and Oilseed Markets

Grains and oilseeds make up nearly 60 per cent of Canada's agricultural exports. In the period 1984-87, grains and grain products represented, on average, 47 per cent of total agricultural exports; oilseeds, oil, and meal accounted for another 11 per cent. Other major export commodities included live animals, pork, beef, industrial milk, and potatoes. A look at how Canadian wheat, coarse grains, and oilseeds fare in international markets is useful in examining the Prairie grain economy.

Wheat

Canada is the world's seventh largest wheat producer (Table 4-1). It produces almost 6 per cent of the world output but supplies about one-fifth of all the wheat that is traded internationally. Its market share was nearly 40 per cent in the 1950s, but it has fallen to between 17 and 23 per cent during the last 20 years. In the postwar years, Canada played a leadership role in the international wheat market, particularly in the context of the International Wheat Agreement. Until the recent creation of the Cairns Group, however, its role in the 1970s and 1980s was less active. Although Canada remains the second largest wheat exporter, it has recently had to pay dearly in order to maintain its share of the market.

The Prairie provinces established a reputation as a reliable source of supply of high-protein, hard wheat early in the 20th century. The brown- and black-soil zones of the three provinces (see map on page 50) are among the best-suited regions in the world for wheat production. In addition, land prices in Canada have always been lower than in Europe and in many parts of the United States. So, despite the long distances involved, it was advantageous for European importers to seek their supplies in Canada.

Table 4-1

Estimated Production, Exports, and Imports of Wheat and Coarse Grains, Selected Countries, 1986/87

	Production	Exports[1]	Imports[1]
	(Millions of metric tons)		
Wheat[2]			
Soviet Union	92.3	1.0	16.0
China	90.0	. . .	9.4
European Community	72.0	15.5	2.6
United States	56.9	28.3	. .
India	46.9	. .	. .
Eastern Europe	34.3	2.0	2.9
Canada	31.4	20.4	. . .
Australia	16.2	14.5	. . .
Argentina	8.9	4.3	. . .
World total	536.3	90.1	88.8
Coarse grains			
United States	252.8	42.0	. . .
Soviet Union	107.2	. . .	13.0
China	87.2	4.7	6.5
European Community	81.6	8.2	3.2
Eastern Europe	60.8	1.2	3.7
India	28.7	. .	. .
Canada	25.5	7.1	. .
Brazil	21.3	. .	2.1
Mexico	17.7	. .	3.6
World total	850.4	84.3	85.7

1 Excluding intra-European-Community trade.

2 Trade data include wheat flour in wheat equivalent.

SOURCE Food and Agriculture Organization of the United Nations, *Food Outlook*, February 1988.

Canada is well known for its efficient system of quality control, administered by the Canadian Grain Commission and the Canadian Wheat Board. The two agencies regulate and grade all the grain exported from western Canada. As a result, Canadian wheat enjoys a reputation for high quality and for consistent and reliable grading. There is a price premium for both the quality of the product and its homogeneity. Historically, between 60 and 80 per cent of Prairie production has consisted of high-quality wheat, with durum wheat being the next most important. Less than 2 per cent has been medium-grade, and less than 10 per cent has been soft wheat. In contrast, the bulk of the wheat production of Europe and Australia – and 50 per cent of that of the United States – falls within the medium- and low-quality ranges.

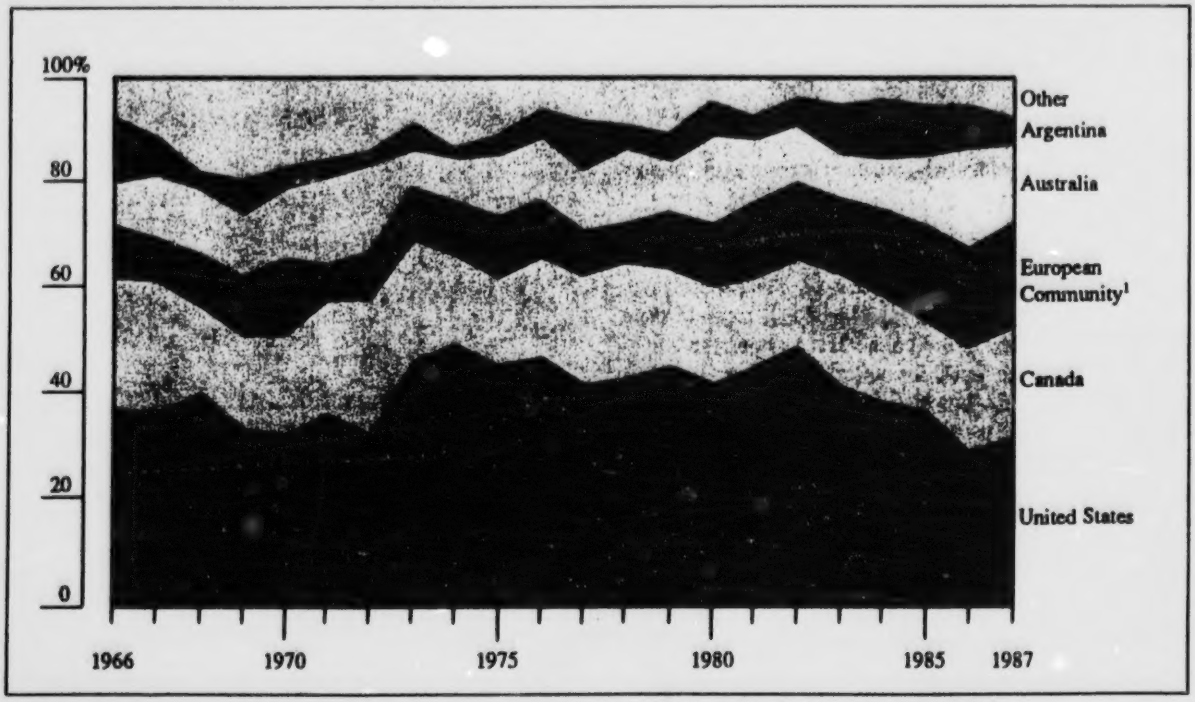
Until quite recently, the Canadian Grain Commission refused to license the lower-quality, but higher-yielding, varieties of wheat for fear of damaging Canada's reputation for quality. The Commission changed that policy in 1985 and decided to license certain high-yielding varieties that can be visually segregated from higher-class products for grading purposes. Such varieties are now being produced in several Prairie regions. Canada will thus be able to retain its reputation for quality control while benefiting from a wider array of product options.

High-grade wheat can be sold more easily than soft wheat in periods of surplus capacity. Indeed, Canada's share of the world market fluctuates less than that of other exporters (Chart 4-1). While it tends to decline in times of rapid trade expansion, such as the 1970s, it rises in periods of market contraction (estimates show that in 1986/87 it rose to 22 per cent). This is often attributed to the consistently high quality of the product, which has won Canada the loyalty of many customers – the Soviet Union, in particular. It is interesting to note that Canadian exports to the Soviet Union fluctuate much less than do that country's total imports. China is the second largest importer of Canadian wheat (Chart 4-2). Japan, Canada's third most important customer, only imports high-quality wheat from this country, whereas it buys medium-quality wheat from the United States and Australia. The volume of Canada's exports to the Japanese market has been declining, however. Other large purchasers include Algeria, some countries in the Middle East, Cuba, Brazil, Italy, and the United Kingdom. Exports to the latter two countries must overcome import barriers that raise the price of Canadian wheat by a considerable margin.

The destinations of Canadian wheat exports have changed considerably. In 1960/61, Canada sold 70 per cent of its wheat and flour to industrialized countries, but that proportion had dropped to 14 per cent by 1984/85 (Table 4-2). Meanwhile, the developing countries and the centrally planned economies have been taking an ever larger share of Canadian exports.

Chart 4-1

Market Shares of Major Wheat-Exporting Countries, 1966-87

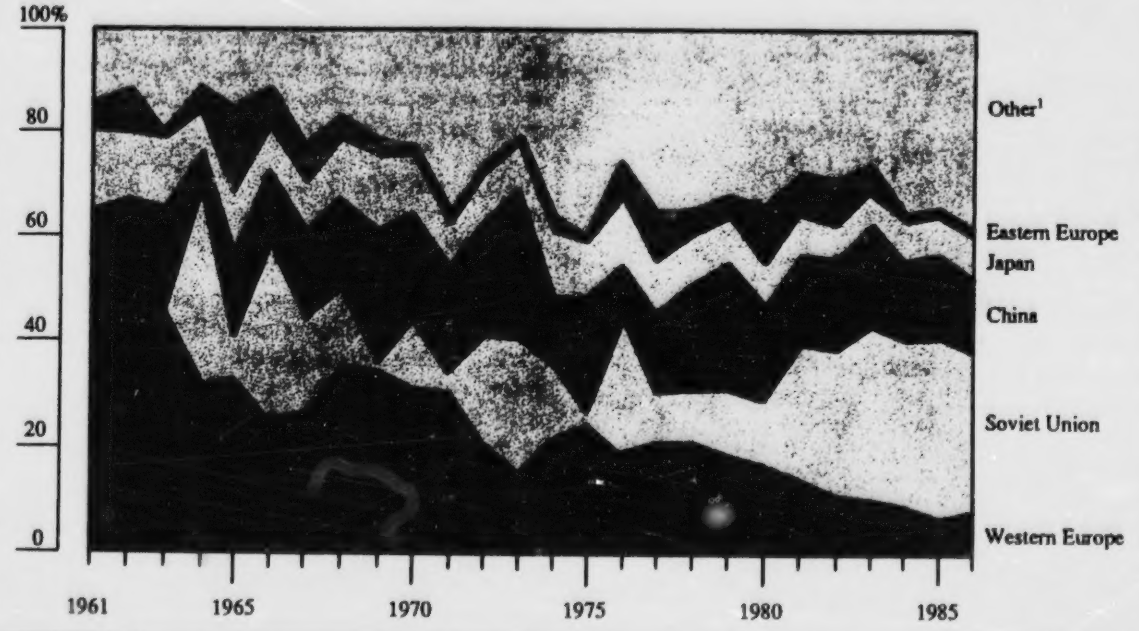


[1] For comparison purposes, the Community's current 12 members have been included in the data for the whole period 1966-87.

SOURCE Furtan et al., *Grain Market Outlook*.

Chart 4-2

Destination of Canadian Exports of Wheat and Wheat Flour, 1961-86



[1] Includes Algeria, Bangladesh, Brazil, Cuba, Egypt, Israel, and South Korea.

SOURCE: Carter et al., *Canada and International Grain Markets*.

The Future of Canadian Wheat

The changes that have occurred in world markets in recent years are leading some observers of Prairie agriculture to express doubts about the future of Canadian wheat exports. They question whether the Prairie provinces still have an advantage in wheat production and, if so, whether Canada should change its production strategy to respond to changing demand.

In such a discussion, it is easy to confuse comparative with absolute advantage. A country benefits from its comparative advantage when it exports the commodities that it produces most efficiently and imports those in which it is relatively less efficient. That basic tenet remains true even when that country is not the world's most efficient producer of the commodities it exports. In the Prairies, favourable climatic conditions for high-quality wheat production are combined with the availability of farmland. Moreover, there are few other productive uses for much of this land. This and other factors confirm that high-grade wheat is one of the products that Canada produces most efficiently.

It is difficult, however, to rank the efficiency of the Prairie provinces in wheat production with that of their strongest competitors – the United States, Argentina, Australia, and France. Yields per acre only provide a partial measurement. We can only compare the production costs of different countries and the efficiency with which they use their resources when costs reflect the contributions of all the inputs – land, labour, equipment, chemicals, and other working capital – in each country. But government intervention in the various markets frequently obscures costs and prices, and exchange rates may make comparisons misleading. Vollrath and Brinkman have both recently concluded, using quite different methods, that Canada has an advantage in wheat production.[1]

We conclude that there is no reason to doubt that Canada is competitive in the production of wheat, particularly high-protein wheat. But changing demand, coupled with transportation costs that are higher than those of its competitors, means that Canada cannot count on being able to benefit from that advantage automatically.

Table 4-2

Distribution of Canada's Exports of Wheat and Wheat Flour, by Destination, 1960/61 to 1984/85

	Developed countries	Centrally planned economies	Developing countries
		(Per cent)	
1960/61	70	15	15
1961/62	60	27	13
1962/63	63	19	18
1963/64	41	51	8
1964/65	46	39	15
1965/66	33	54	13
1966/67	38	41	21
1967/68	50	35	15
1968/69	49	30	21
1969/70	43	35	22
1970/71	41	24	35
1971/72	31	43	26
1972/73	23	55	22
1973/74	37	27	36
1974/75	35	25	40
1975/76	32	43	25
1976/77	32	34	34
1977/78	30	36	34
1978/79	27	42	31
1979/80	26	40	34
1980/81	22	51	27
1981/82	20	52	28
1982/83	17	58	25
1983/84	17	46	37
1984/85	14	56	30

SOURCE Carter et al., *Canada and International Grain Markets*.

This leads to the question of Canada's output strategy for wheat. Since world trade in wheat, especially of the high-protein variety, is growing more slowly than trade in coarse grains, fats and oils, and red meats, is Canada's traditional emphasis on quality rather than quantity still justified? Or should more attention be given to the high-yielding varieties of wheat, as well as to coarse grains and oilseeds?

Many soil zones in the Prairies – the brown-soil areas, in particular – are better endowed for high-grade wheat than for the higher-yielding, lower grades, which require more moisture. But in some regions (in parts of northern Saskatchewan, for example), the returns to high-yielding varieties are greater than those to high-grade wheat. In other areas, such as the black-soil zones, barley can be more profitable.

There is a fairly narrow price band within which producers can benefit from the premium for the higher grade of wheat. If the price spread is too wide, it becomes economical to add gluten extract to a low- or medium-quality product. Millers in Western Europe are being encouraged to use gluten supplementation by import levies that sometimes double the domestic price of imported high-protein wheat. Canada has a strong interest, therefore, in having this trade barrier reduced.

We conclude that it would be just as ill-advised for Canada to jettison its emphasis on quality as it would be to shut the door on opportunities for developing other grain and oilseed products for both foreign and domestic markets. The licensing of high-yielding varieties is a step in the right direction, since it enables farmers to produce lower grades of wheat while maintaining quality control and consistent grading, should they find it profitable to do so. In general, producers should be encouraged to search out the markets that they can supply most efficiently.

Coarse Grains

Canada is a much less important player in the international coarse-grain market than in the wheat market (see Table 4-1). Barley accounts for 60 to 90 per cent of the value of its exports of coarse grains, followed by rye and oats. Both the volume and the market share of Canada's coarse-grain exports have risen since the early 1970s. In the 1960s, average annual exports amounted to 1.2 million tonnes, or 3.5 per cent of world trade. By 1970, Canada's market share had risen to 9 per cent; it averaged out at 5.4 per cent, or 4.3 million tonnes, during the 1970s. In 1986/87, Canada exported 7 million tonnes of coarse grains – approximately 8 per cent of world trade. The main customers for Canadian barley in recent years have been Saudi Arabia, the Soviet Union, Japan, East Germany, and China.

Canada's share of the Japanese barley market has been declining, and some Canadian producers feel that they are being discriminated against by Japanese import restrictions. In general, Japan allows unrestricted entry for feed grains (corn, for example) but imposes quota restrictions on grains for human consumption, such as rice and wheat. Japan produces virtually no corn, but it does produce about one-quarter of the barley it needs, and it treats barley as a food grain. The barley quotas, which are administered by the Japanese Food Agency, are usually filled by Australia and Canada. If barley were treated as a feed grain and were to enter the Japanese market without restrictions, Canadian producers would be free to compete both with U.S. corn producers and with Japan's own barley producers. But because Japan is reluctant to increase its dependency on foreign food supplies, it is unlikely to remove its quota system without the intervention of the GATT.

Canola

The word "canola" was adopted to denote varieties of rapeseed developed in Canada that produce a superior quality of oil and meal. (The oil-extraction rate from the canola seed is about 40 per cent.) Unlike most other varieties of rapeseed, canola contains virtually no erucic acid and no glucosinolates.[2] The U.S. Food and Drug Administration (FDA) recognized it as safe for human consumption in an important decision for Canada in 1985. Canola is a new crop in the Prairies, but it has become nearly as important as barley; indeed, it has replaced barley as the second most important source of crop income in Manitoba and Alberta. Production grew from about one-quarter of a million tonnes in 1960 to 3.8 million tonnes in 1987 (Table 4-3).

Canada used to be a net importer of oilseed products – mostly soybean oil and meal. As a result of the increased canola production, domestic oilseed products have made major inroads in the home market and have shifted Canada's trade stance from that of a net importer to that of a net exporter. Sales of canola oil in Canada have benefited from the increasing consumption of salad oil and the continuing substitution of margarine for butter. By 1987, canola oil was meeting 61 per cent of Canada's vegetable-oil requirements, compared with 28 per cent in 1970. Soybean meal continues to supply about 60 per cent of domestic meal requirements; a little less than half of it is imported, while the rest is produced in central Canada.

About half of the canola seed harvested in Canada is exported, while the rest is crushed domestically. A substantial share of the canola oil produced in this country is also exported; India is the major purchaser, but U.S. imports of canola oil have jumped since the FDA's 1985 decision and are likely to continue to increase. Japan is the principal market for Canadian seed, while the United States is the major buyer of canola meal (Table 4-4). The Canada-U.S. Free-Trade Agreement may result in a slower growth of meal sales to the United States for a few years, as Canadian transportation subsidies are removed. But the gradual reduction of U.S. tariffs on canola meal is expected to more than compensate for this. Sales of seed and meal to Europe have declined substantially, and the European Community's oilseed market is likely to become more difficult to penetrate.

Canada invested heavily in oilseed-crushing capacity during the 1970s, with four of the five crushing mills in western Canada being located in Alberta. Despite a strong market, however, the crushing industry continues to suffer from overcapacity and from the occasional excess of costs over revenues. Profitability depends on the cost of crushing

Table 4-3

Supply and Utilization of Canola, Canada, 1965/66 to 1986/87

	Supply		Utilization		
	Production	Total supply[1]	Exports	Total domestic utilization	Crushed in Canada[2]
			(Thousands of metric tons)		
Five-year averages:					
1965/66 to 1969/70	571	686	346	215	130
1970/71 to 1974/75	1,492	1,905	947	482	286
1975/76 to 1979/80	2,311	2,920	1,236	860	630
1980/81 to 1984/85	2,519	3,340	1,391	1,332	1,060
1985/86	3,498	3,958	1,456	1,563	1,211
1986/87	3,787	4,737	2,126	2,013	1,552

1 Total supply includes stocks carried over from the previous year but excludes imports.

2 Included in total domestic utilization.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada, *Grain Trade of Canada*, Cat. 22-201, various issues; and Agriculture Canada, *Market Commentary*, March 1988.

Table 4-4

Destination of Canada's Canola Exports, 1979/80 to 1986/87

	Average, 1979/80 to 1983/84	1984/85	1985/86	1986/87
	(Thousands of metric tons)			
Seed				
Japan	1,136.5	1,372.7	1,301.2	1,661.3
Mexico	18.7	43.0	113.8	319.6
Europe	205.3	28.2	37.3	79.0
Others	88.1	13.0	3.4	66.2
Total	1,448.6	1,455.9	1,455.7	2,126.1
Meal				
United States	42.6	129.2	119.7	179.2
Japan	6.4	40.9	66.6	97.0
Europe	122.1	57.5	9.5	72.8
Indonesia	3.2	54.5	36.1	46.5
South Korea	15.8	5.5	43.7	30.7
Taiwan	1.3	21.2	14.0	12.2
Others	0.8	10.1	1.6	5.8
Total	192.2	318.9	291.2	444.2
Oil				
India	75.2	131.5	47.5	111.9
United States	3.9	10.6	33.2	68.6
Pakistan	8.4	2.0	0.3	28.8
Hong Kong	10.9	18.5	24.4	13.5
Japan	11.3	9.0	6.2	1.9
Others	51.5	65.2	52.7	80.9
Total	161.2	236.8	164.3	305.6

SOURCE Statistics Canada, *Grain Trade of Canada*, Cat. 22-201, various issues.

and on the gross crushing margin – i.e., the difference between the cost of seed and the cost of oil. Any combination of factors that raises the price of seed relative to the price of oil and meal reduces profits. The plants in western Canada have seldom operated at full capacity: utilization rates in the early 1980s ranged from a low of 55 per cent to a high of 76 per cent. Even after receiving $41 million in operating subsidies, the western plants ran up losses of over $18 million over the six-year period from 1980 to 1986.

Japanese demand is a major factor affecting the crushing industry in Canada. Japan expanded its canola-crushing capacity from just over half a million tonnes in 1972 to 1.2 million tonnes in 1982. Almost all of the seed it crushes is imported – most of it from Canada. Canadian crushers therefore compete with Japanese crushers for Canadian seed supplies. Canada maintains a relatively open trade policy on seed, oil, and meal, with little protection for domestic crushers. Japan, however, imposes tariffs of 17,000 yen per tonne of crude canola oil and 23,000 yen per tonne of refined oil, although it allows canola seed to enter the country freely. As a result, Canada exports very little oil and meal to Japan. The tariff and the Japanese preference for canola oil relative to other vegetable oils, such as soybean oil, provide Japanese crushers with an advantage over their Canadian competitors. When supplies of seed are tight, Japanese crushers are able to bid supplies away from Canadian crushers, thus raising the price of canola seed in Canada and reducing the crushing margin for Canadian plants (Chart 4-3). A reduction of the Japanese tariff on canola oil, which would lead to increased sales of Canadian oil in Japan, would probably lower the price of seed in Canada while increasing the profitability of Canadian crushing operations.

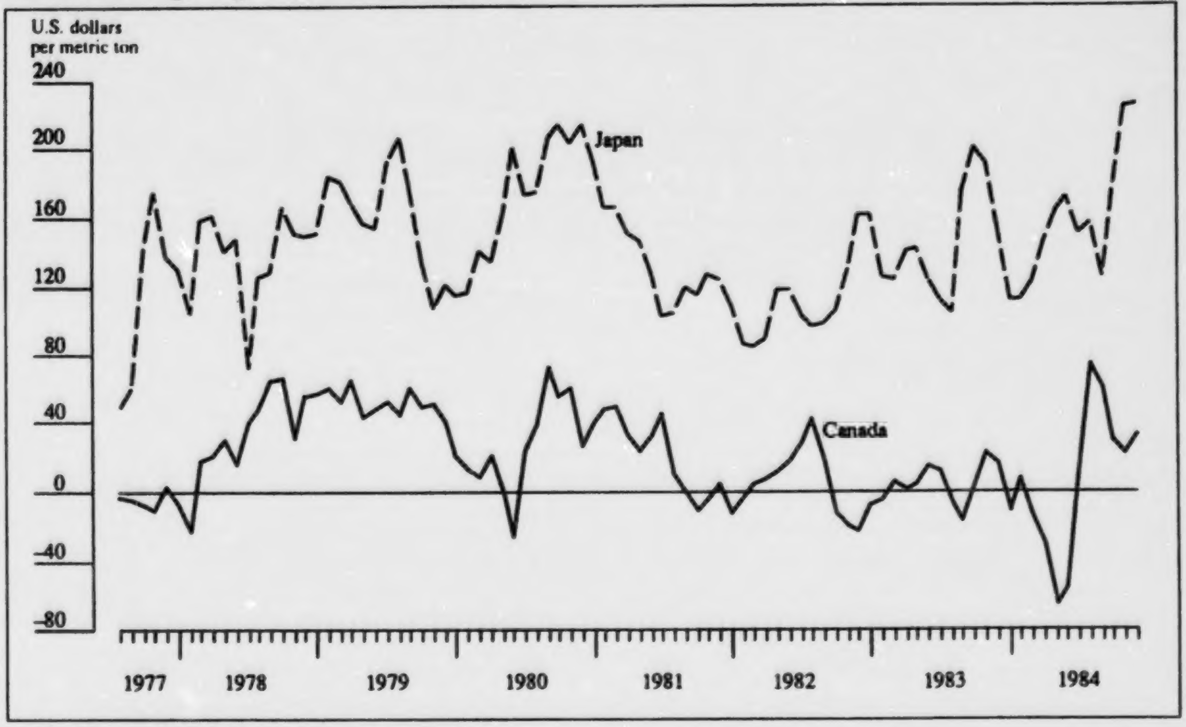
The Japanese market is an important but difficult one for Canada, because it combines preferences for soymeal and for canola oil. While the Japanese consumption of oil has probably reached its per-capita saturation level, the demand for meal for livestock feed continues to grow. But Japanese livestock producers prefer soymeal to canola meal. This suggests that imports of soybeans – the United States is Japan's primary source – are likely to increase faster than those of canola seed.

The world demand for oilseeds, oil, and meal is growing very rapidly and is strongly influenced by income levels, as noted in Chapter 2. The Soviet Union is one example of a country that is likely to have to double its imports of oilseeds over the next 10 years. That possibility provides opportunities for Canadian exporters. But competition will be fierce, not only from the United States but also from the developing countries – Brazil, in particular. Brazil's annual exports of oilseed meal rose from 700,000 tonnes in 1970 to over 9 million tonnes in 1985, and it has now overtaken the United States as the most important oil and meal exporter.

The European Community is another producer that has greatly increased its output of oilseeds over the past 20 years, nearly doubling the acreage seeded to rapeseed. In the United Kingdom, the area seeded to rapeseed rose from 12,000 to 730,000 acres in 15 years. The Community as a whole, formerly a major net importer of fats and oils, decided to encourage the production of oilseeds at the expense of grains and made oilseed production extremely

Chart 4-3

Canola-Crushing Margins,[1] Canada and Japan, 1977-84



1 The difference between the cost of seed and the cost of oil.

SOURCE Carter et al., *Canada and International Grain Markets*

profitable. As a result, the Community now enjoys a balanced trade in raw seeds; it has become a net exporter of oil, and the level of its net imports of meal is declining. But it has to pay a hefty subsidy to crushers to process local seed rather than the cheaper imported seed. In 1988, the subsidy was equal to C$276 per tonne. The Community cannot impose tariffs on oilseeds or raise tariffs on vegetable oils, because its zero-rated or low tariffs on those commodities are bound under the GATT.

Trade liberalization could reduce the volume of the Community's rapeseed output, but the market would still be a difficult one for Canada. As a result of an early erucic-acid "scare," European consumers have not yet fully overcome their doubts about the safety of canola oil. In the absence of trade liberalization, Canadian exporters of canola products might find themselves competing with European rapeseed products in third markets.

Summary

Canada is a well-established participant in the three markets that we have examined. Over the past 20 years, it has maintained its share of the wheat market and increased that of the coarse-grain and oilseed markets, in the face of stiff opposition. Lost markets for wheat in Western Europe have been replaced by new markets in the Soviet Union, China, and the developing countries. While it is difficult to compare the production costs of different countries in a world of changing technology and administered prices, we have no reason to believe that the Prairies provinces have lost their comparative advantage in grain production.

Nevertheless, the vulnerability of the Prairie grain economy, particularly in the wheat sector, has increased. As the number of exporters has decreased, the United States and the European Community, both of which guarantee fixed prices to their producers, have assumed a greater role in the international market. Both are much less dependent on exports than Canada: the European Community only exports about 20 per cent of its wheat; the United States, between 40 and 60 per cent. Canada, in contrast, sends between 70 and 80 per cent of its wheat overseas. One of its main customers, the Soviet Union, has the potential to become self-sufficient in wheat, and the demand for wheat in the developing countries is vulnerable to changes in the world economy.

Traditionally, Canada's agricultural policies have favoured bulk grain and oilseed exports, in contrast to those of Brazil and certain European countries, which have subsidized the domestic upgrading of agricultural commodities before exporting them. The support granted to Canadian canola-crushing plants is an exception, and its success has been limited. As a consequence, the value-added of Canada's agricultural exports is by far the lowest of any of the developed countries (with the exception of the United States).

5 Long-Term Prairie Farm Trends

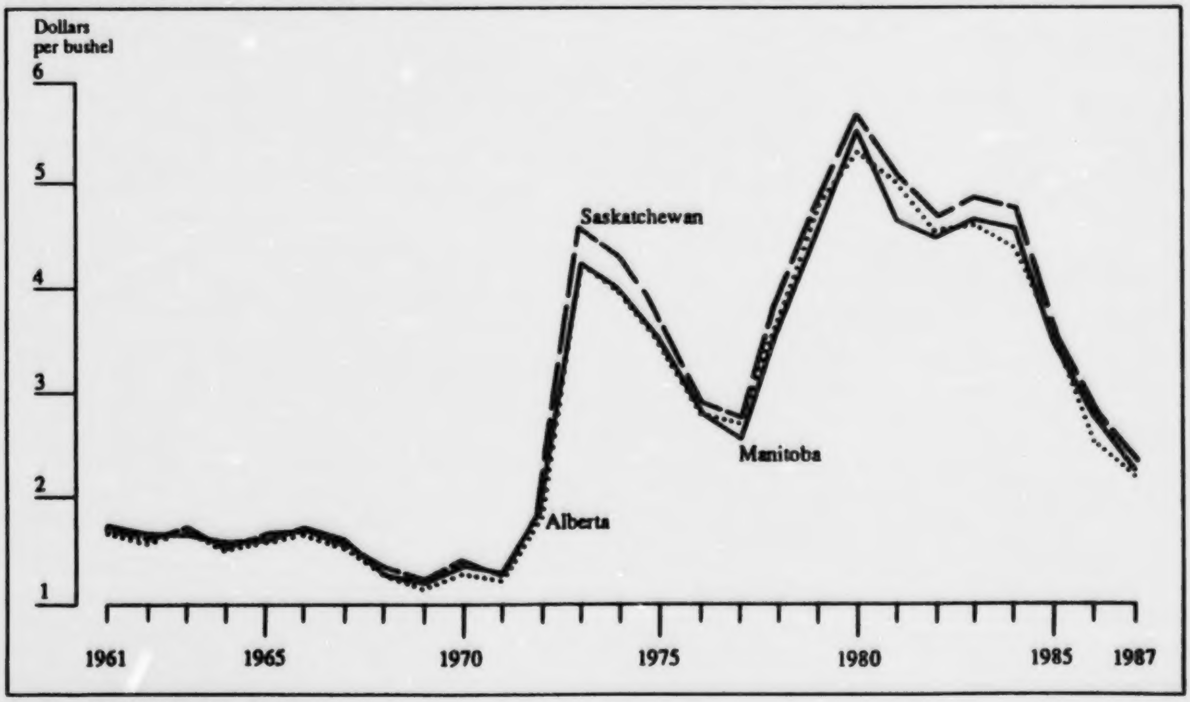
In Canada and many other industrialized countries, much of the agricultural sector has long been encumbered by a persistent cost/price squeeze. During the early years of Prairie settlement, the combination of strong population growth, rising consumer incomes, and expanding international trade in grains strengthened the demand for farm output and maintained farm incomes at an adequate level. But the settlement period ended with the Great Depression and the Second World War. Since then, there has been a virtually uninterrupted shift from farm to nonfarm employment, as farmers have had to adjust to new patterns of supply and demand, both domestically and internationally.

The Cost/Price Squeeze

From the early 1960s to 1972, the nominal price of wheat declined quite steadily, but in 1973 it rose suddenly. After that initial peak, it dropped sharply in 1974 and 1975, recovered and reached a new high in 1980, only to fall to another low point in 1987 (Chart 5-1). With some variations, other crops and livestock followed a similar pattern. Between 1961 and 1981, the prices of crops and livestock tripled, but after 1981 they diverged (Chart 5-2). Livestock prices held up and then continued to rise, while crop prices dropped.

Chart 5-1

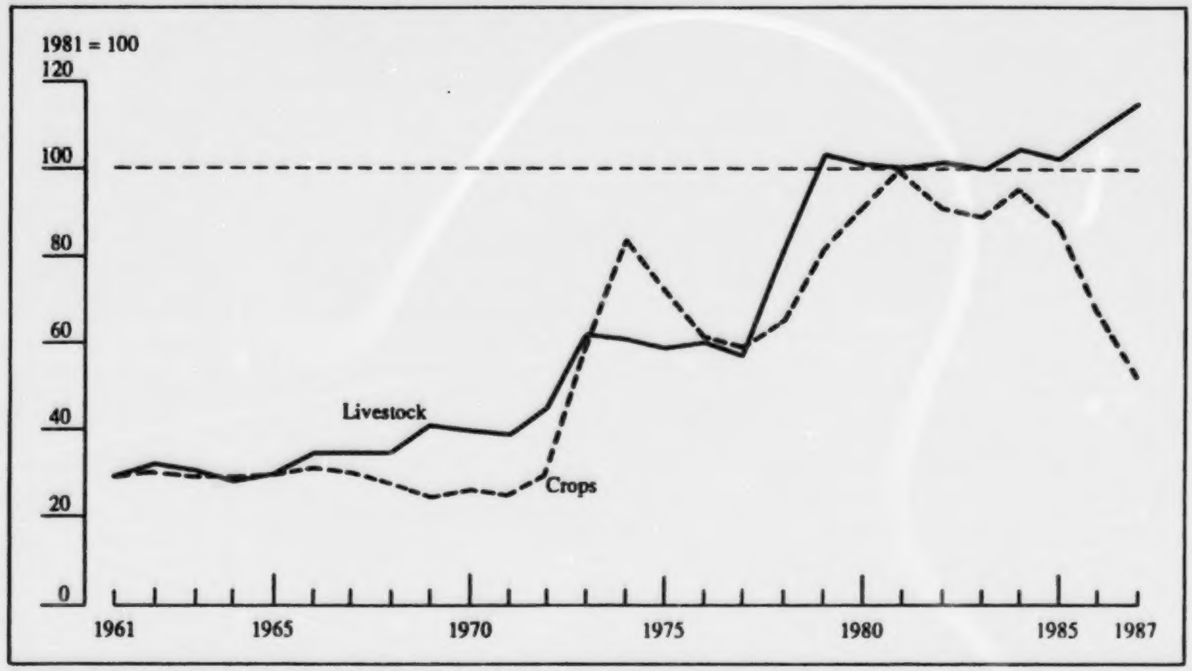
Price of Wheat, Prairie Provinces, 1961-87



SOURCE Data from Statistics Canada.

Chart 5-2

Price Indexes of Crops and Livestock, Prairie Region, 1961-87



SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada; and J. E. Cloutier and L. M. Wess, "Aggregate provincial agricultural cost functions for the three Prairie provinces," Economic Council of Canada, Discussion Paper 352, Ottawa, 1988.

The higher farm prices of the early 1970s were the signal for an increase in farm output. Prairie farmers put a portion of their summer-fallow acreage into crops and purchased more fertilizer, pesticides, and herbicides to raise their yields. They also bought new and more powerful equipment to cope with the extra output, and this increase in demand pushed up the prices of all farm inputs. As the prices of wheat and other crops continued to rise, many farmers bought more land to capture the economies of greater farm size. Land prices rose dramatically (Chart 5-3).

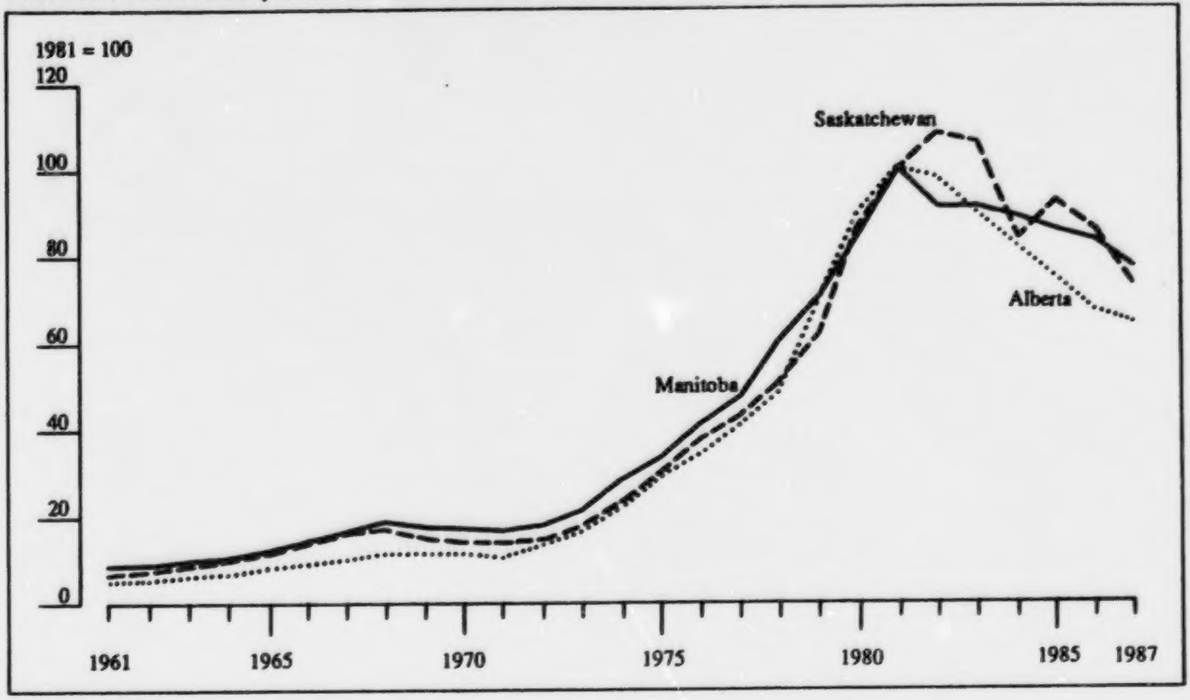
From the early 1970s to the mid-1980s, the annual cash operating expenses of Prairie farmers rose from roughly $1 billion to over $6 billion. Farm debt increased throughout the 1970s, and interest payments on borrowings grew until they reached one-fifth of cash operating expenses; these payments then declined when interest rates fell back in the mid-1980s. Since the financial returns to labour, management, and farm capital were low, the additional but unavoidable interest payments cut deeply into farm cash income. Total operating expenses increased even more than interest payments (Chart 5-4), and so the much-publicized "debt crisis" in Prairie agriculture was only part of the problem. Lower world prices, combined with higher operating costs, put most Prairie farmers in a cost/price squeeze. Those who faced additional costs to service their debt were, of course, at greater risk.

Farm Incomes

Although the financial situation varied from farm to farm, the severity of the cost/price squeeze is clearly reflected in the average income position of Prairie farmers. During the 1980s, annual gross income per farm operator varied from roughly $60,000 in 1980 to $75,000 in 1984, then dropped again to $60,000 in 1987. If all direct government subsidies and income from off-farm work, investment, and other sources had been excluded, the average net farm income would have amounted to approximately $12,000 in 1980 and $10,000 in 1984. In other words, during the 1980s the average Prairie farmer would have had only $10,000 to $12,000 left to pay for family living expenses. In 1987, the realized net income of farm operators would have dropped so low that little or nothing would have been left for living expenses had other sources of income not been available.

Chart 5-3

Price Index of Farmland per Acre,[1] Prairie Provinces, 1961-87



[1] Including buildings.

SOURCE Based on data from Statistics Canada and the Farm Credit Corporation.

The current crisis only accentuates the underlying long-run problem of Prairie agriculture – persistent low farm incomes. A more detailed analysis of the financial situation of Prairie farmers, covering the years 1961-85, shows that the labour income of the average operator, after accounting for all other farm costs, was less than the average industrial wage rate in most years. As Chart 5-5 shows, the return to the average farmer for his labour tended to be well below what he would have earned had he been paid the average industrial wage.

By 1985, the prices of farm products per unit of output barely covered the costs of inputs, and the labour income of farm operators was actually approaching zero. These estimates are based on land costs that are no higher than the rental rate of Prairie farmland – a rate roughly equivalent to 4-per-cent interest on capital investment in farmland. At any higher rate – and many of the farmers who bought land had to pay a much higher rate – farmers were losing money. For those who had borrowed heavily, that spelled disaster when the price of wheat declined in the mid-1980s.

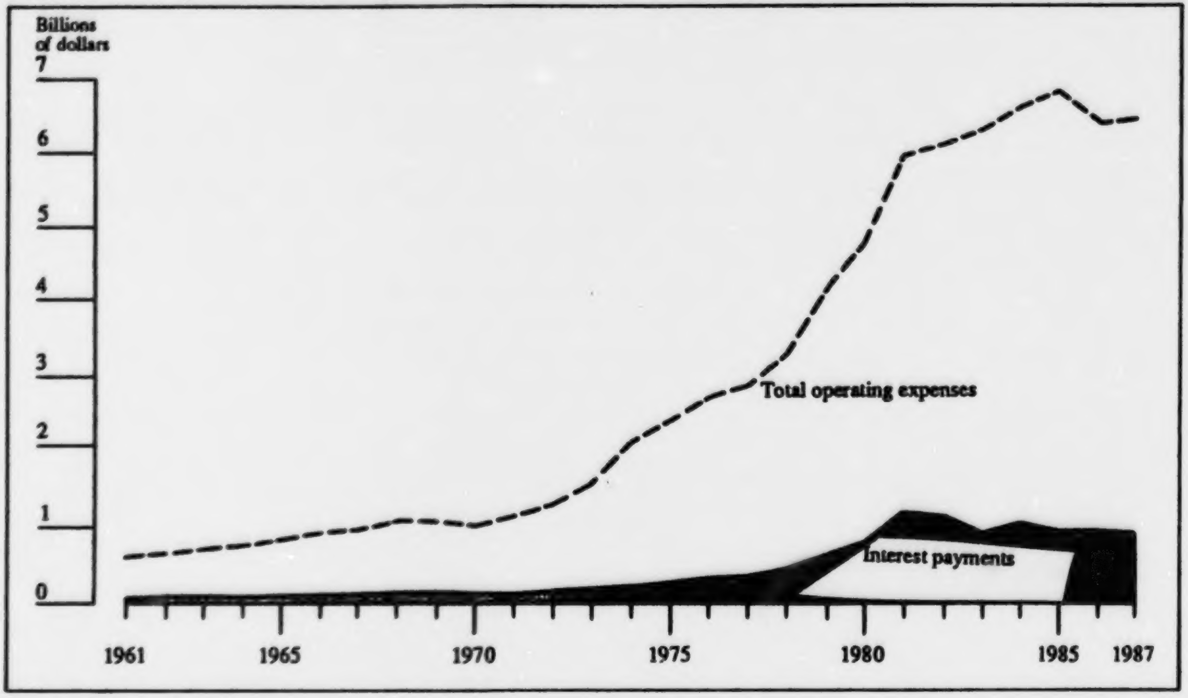
Under these conditions, many Prairie farmers were in very serious financial difficulty. Most of them managed to cope, at least temporarily, by resorting to one or more of several possible alternatives: living off the depreciation; government support; off-farm income; and savings.

Living off the Depreciation

Many farmers had to spend money on living expenses that they would normally have set aside for the replacement of aging farm buildings and worn-out machinery and equipment. To illustrate: in 1985, the total capital stock (including farmland) on Prairie farms amounted to over $60 billion, or approximately $475,000 per farm operator. The depreciation on buildings, machinery, and equipment would have averaged approximately $12,000 per farm. Adding that amount to the 1987 net farm income of –$1,000 would have allowed for average farm living expenses of approximately $11,000. That would have brought farm incomes almost back up to their 1980 level. It should be pointed out, however, that while reliance on the depreciation might work for

Chart 5-4

Farm Interest Payments and Cash Operating Expenses, Prairie Region, 1961-87



SOURCE Data from Statistics Canada.

one or two years, it is not a viable solution for the longer run, because by using up the funds set aside for depreciation, farmers would be unable to replace their aging equipment.

Government Support

In the wake of the sharp decline in world grain prices and of the price war between producers, the Canadian government provided additional support to Prairie farmers. In 1987, direct payments under the *Western Grain Stabilization Act* and the Special Canadian Grains Program amounted to $2.2 billion, or roughly $16,000 per Prairie farmer. Direct and indirect payments under numerous other federal programs added roughly another $1.8 billion, bringing the total up to $4 billion, or about $31,000 per farmer. Thus, during the most recent years, government support accounted for nearly all of the net farm income of Prairie farmers (Chart 5-6).

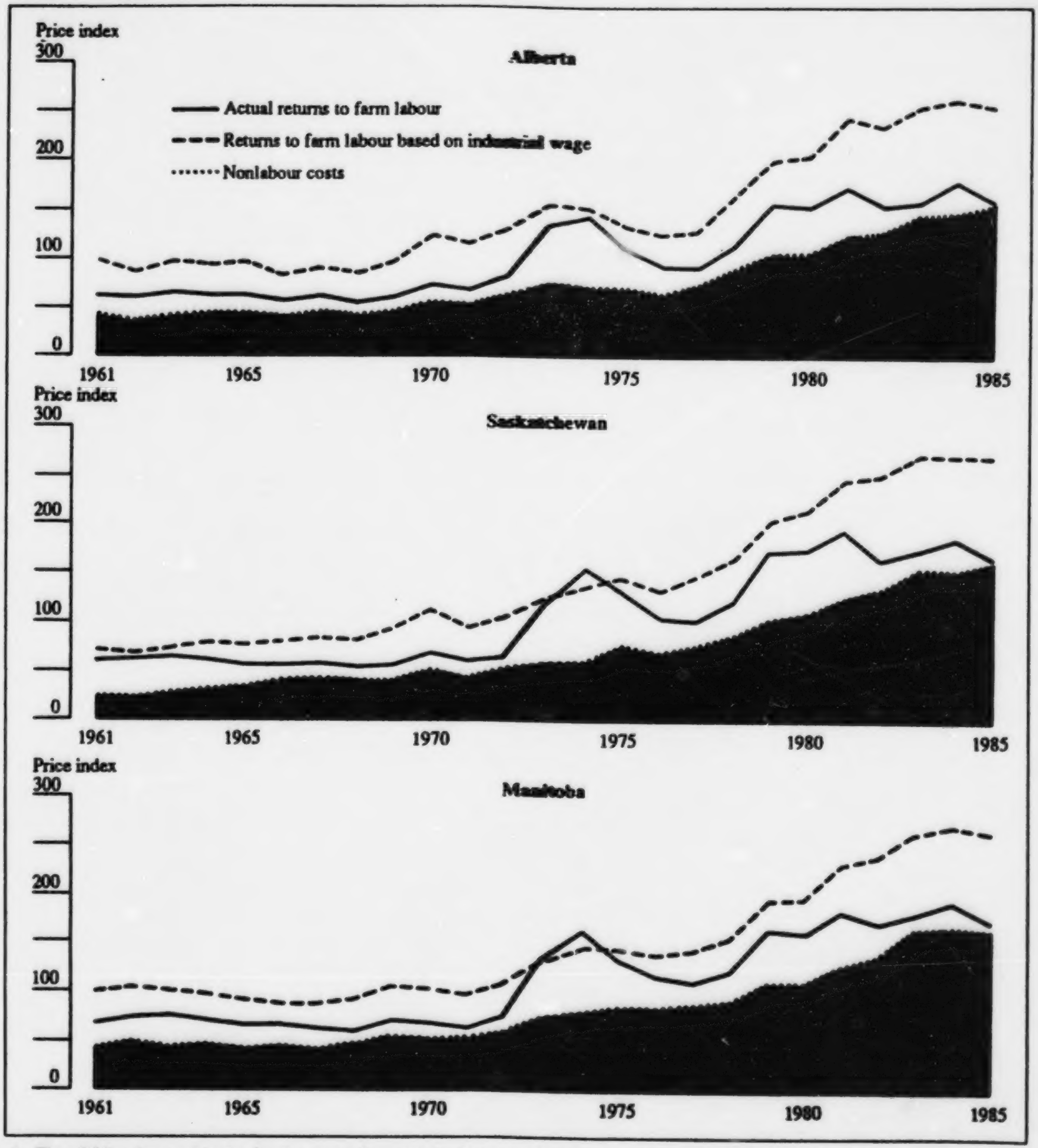
Off-Farm Income

Canadian farm families have been deriving an increasing share of their income from off-farm sources. In the late 1940s, off-farm income accounted for less than 10 per cent of the income of farm families; by the early 1980s, that portion had risen to almost 50 per cent. For several decades, off-farm work has made the largest contribution to the increase in nonfarm income; during the past decade, however, income from nonfarm investments has also increased substantially.

Consistent with these Canada-wide trends, the off-farm income of Saskatchewan farm families increased during the postwar period; most of it consisted of earnings, with a much smaller share coming from nonfarm investments. A survey of selected communities in Saskatchewan showed that in 1975, only one-third of farm households had a family member who earned off-farm income; by 1987, well over half (58 per cent) of the farm households had at least one member with nonfarm employment. Off-farm occupations for men were mainly in processing, construction, and trades; for women, they were mainly in the service industries, such as clerical and sales occupations, teaching, medicine, and health care. Most of the increase in off-farm work was associated with the greater participation of women in the labour force.

Chart 5-5

Cost/Price Squeeze, Prairie Provinces, 1961-85[1]



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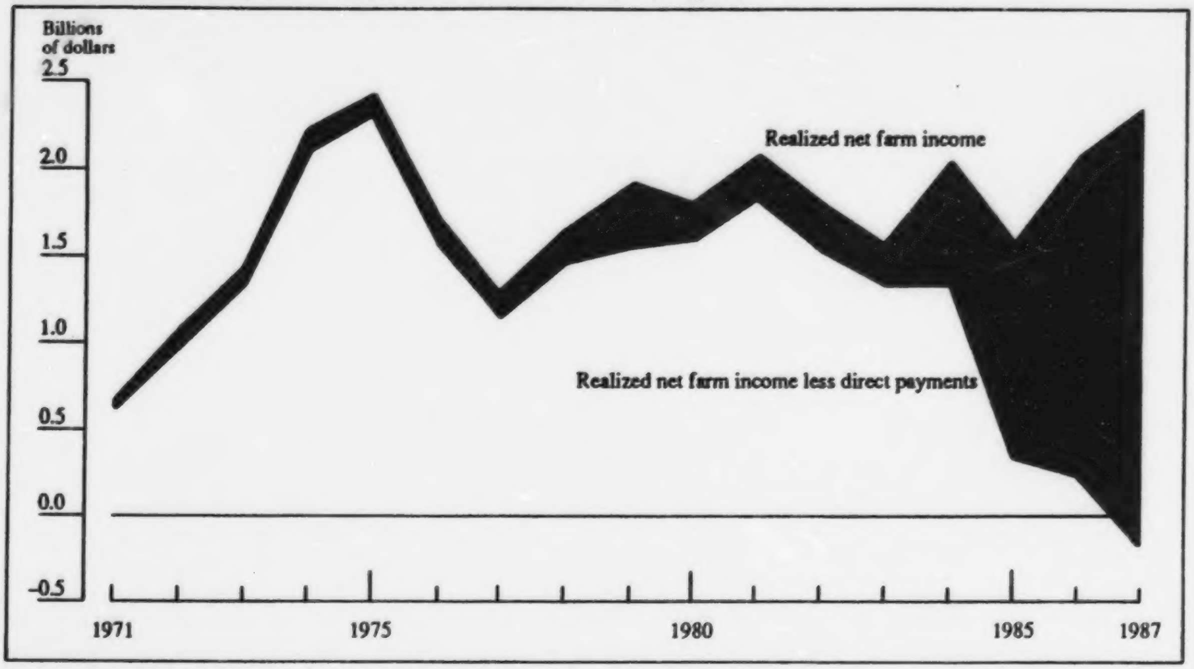
[1] The solid line denotes the price that the average farmer received per unit of output – e.g., the price received per bushel of wheat. The dotted line denotes his nonlabour cost per unit of output. The broken line indicates what he would have earned had he been paid, after allowing for a return on all farm capital inputs, the average industrial wage.

SOURCE Cloutier and Wesa, "Aggregate provincial agricultural cost functions."

Chart 5-6

Direct Government Payments and Realized Net Income, Prairie Region, 1971-87



SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

In the 1980s, off-farm income in Saskatchewan exceeded farm income by a substantial margin. In 1985, for example, it averaged about $20,000 per farm and accounted for roughly three-quarters of the average family income. Off-farm salaries and wages, as well as other nonfarm self-employment income, accounted for over two-thirds of all off-farm income; investment income and Old Age Security payments represented one-fifth; and the small remainder came mostly from family allowances and unemployment insurance benefits (Table 5-1).

Table 5-1

Distribution of Off-Farm Family Income, by Source, Prairie Provinces, 1985

	Manitoba	Saskatchewan	Alberta
		(Per cent)	
Wages and salaries	62	61	65
Self-employment income	7	7	9
Investment income	14	16	13
Old Age Security income	7	7	5
Retirement income	2	3	3
Family allowances	3	3	2
Unemployment insurance benefits	3	2	2
Other	2	1	1
Total	100	100	100
		(Dollars)	
Off-farm and other family income	17,231	18,992	23,847

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

Considering that even during the more favourable years (from 1974 to 1984), Prairie farm income – i.e., realized net farm income less direct government payments – ranged from $9,000 to $15,000 per year, off-farm income is a very important source of income for farm families. But it may also be a precarious source of income, as it depends, to a large extent, on the presence of services in nearby, often rural, communities – schools, hospitals, local stores, and so on. The viability of these institutions and businesses may depend, in turn, on the number of farm families in the surrounding area. When that number declines, the need for those services diminishes, and employment opportunities may well disappear.

The Adjustment Response

Historically, the changes in the demand for Prairie farm output that resulted from increased domestic consumption and greater export volume were barely sufficient to provide farmers with adequate incomes. The adoption of new production techniques led to increased output per farm but did not produce enough farm income. That could only be achieved if farmers enlarged the size of their operation at the same time.

Adjustment on the Farm

Over the past two or three decades, Prairie farmers have made some major adjustments in their production and their resource use. Between 1961 and 1985, for example, farm output grew – with substantial variations from year to year – at roughly 2.5 per cent per year, with Saskatchewan showing a somewhat lower rate and Manitoba a somewhat higher one (Table 5-2). Most of this increase resulted from a greater volume of crop production, with canola and barley making above-average contributions in all three provinces. On the livestock side, the picture was mixed: cattle and poultry contributed to higher volumes of production in Alberta, as did hogs in Manitoba. There was little or no growth in Saskatchewan's livestock production, as the slight gains in cattle and hogs were more than offset by losses in dairy products and poultry. As a result, Saskatchewan farmers opted for increased crop production rather than diversification into livestock production.

During that period, Prairie farmers adjusted their resource use (Table 5-3). They invested heavily in machinery and equipment, used more fertilizer and pesticides on the expanded cropland acreage, and went deeper into debt to buy more land. But they reduced their labour inputs. Most of the reduction came from the decline in the number of farm operators and, to some extent, from the decrease in unpaid labour. These changes in resource use reflect the underlying historic trends of the substitution of capital and material inputs for labour.

Adjustment off the Farm

In their attempt to keep farm incomes growing, Canadian Prairie farmers – not unlike farmers in other industrialized countries – improved their crop and livestock yields,

Table 5-2

Growth Rates of Crop and Livestock Output,[1] Prairie Provinces, 1961-85

	Manitoba	Saskatchewan	Alberta
		(Per cent)	
Crops			
Wheat	3.7	1.8	3.0
Oats	-4.6	..	-1.3
Barley	9.8	7.7	5.4
Canola	15.5	7.3	10.5
Rye	5.4	4.3	2.5
Flaxseed	3.2	-0.2	-5.6
Vegetables	6.5	6.9	0.5
Average	4.8	2.6	3.7
Livestock			
Cattle and calves	1.5	0.4	2.1
Hogs	4.5	0.1	0.5
Sheep and lambs	-2.2	-3.6	-3.9
Milk	-1.2	-2.4	-0.6
Poultry	1.5	-0.1	3.1
Eggs	1.6	-2.0	-0.2
Wool, honey, and fur	0.4	2.7	0.4
Average	1.6	-0.1	1.3
Crops and livestock	3.4	2.0	2.5

[1] Measured in 1981 constant dollars.

SOURCE J. Eden Cloutier and Lesle M. Wesa, "Aggregate provincial agricultural cost functions for the three Prairie provinces," Economic Council of Canada, Discussion Paper 352, July 1988.

Table 5-3

Change in Farm Inputs, Prairie Provinces, 1961-85

	Manitoba	Saskatchewan	Alberta
		(Per cent)	
Labour	-1.4	-2.9	-2.2
Capital	1.8	1.5	2.1
Material inputs	5.0	4.1	4.7

SOURCE Cloutier and Wesa, "Agricultural cost functions."

mechanized farming operations, and expanded the size of their farms. Had the adoption of new technology and the expansion in farm size been costless, the reduction in farm numbers would have been just sufficient to enable the farmers who remained in the industry to meet that income goal. But technology is obviously not free. The road to that long-term goal became a treadmill of expenses – for the acquisition of new farm machinery, the costly purchase of land, and the rapid accumulation of farm debts.

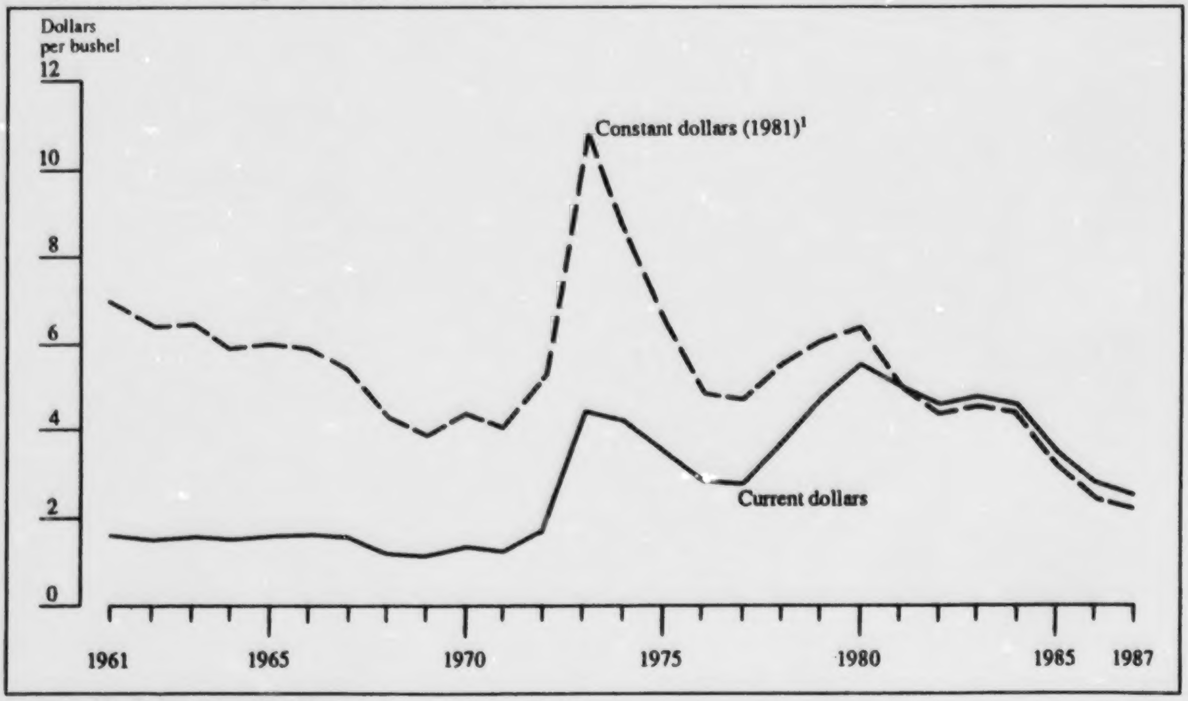
It is remarkable how quickly farmers respond to higher output prices and how slowly they react to greater input costs. After a decade without changing, wheat prices jumped from less than $2 per bushel in 1972 to over $4 per bushel in 1974. In response, farmers increased wheat output and kept on increasing it as prices continued to rise, reaching a peak of nearly $6 per bushel in 1980. From the early 1970s to the early 1980s, Prairie farmers more than doubled wheat production. In real terms, however, the price of wheat, deflated by input prices, began to decline in 1974 and, after a weak recovery, continued to do so right into the 1980s (Chart 5-7). It is as if farmers, in times of inflationary price expectations, suffered from "money illusion" – an affliction that bedeviled many people in other sectors of the economy as well. That factor may help to explain why so many farmers got caught in the cost/price squeeze and are now unable to cope with their expenses.

Another explanation is that leaving the farm for employment in other industries is a very difficult decision. A statistical analysis of Prairie farm employment shows that the structural adjustment from farm to nonfarm occupations has been related to three factors: the prices of farm products, off-farm employment opportunities, and government subsidies. The rise in prices has slowed down the adjustment, while the lower unemployment rates in the rest of the economy have accelerated it.

In the Prairies – and especially in Saskatchewan – agriculture has a major influence on the rest of the economy. When farm prices rise, agriculture stimulates the province's economic activity; when prices decline, agriculture slows down the rest of the economy and adds to the provincial unemployment. That, in turn, makes it more difficult for

Chart 5-7

Wheat Prices Received by Farmers, Prairie Region, 1961-87



[1] Deflated by the farm-input price index.

SOURCE Based on data from Statistics Canada.

farmers to find off-farm work in their area. Thus it seems that, whether farm prices are high or whether they are low, the time to leave the farm never seems right.

Superimposed on the market mechanism are government programs. Many provide farm subsidies for specific commodities. The 1986/87 Special Canadian Grains Program, for example, provided subsidies to Prairie farmers who grew certain crops. But, as we shall see in Chapter 7, this and other programs that raise the returns on grain marketing above free-market levels distort market signals, do not encourage farmers to diversify into livestock production, and thereby hamper resource adjustment on the farm. Also, there is some evidence that government programs have slowed down the rate of adjustment from farm to nonfarm employment.

Productivity Gains

Over the past several decades, farm employment has declined in the Prairie region at an average annual rate of 2.2 per cent – slightly faster in Saskatchewan and somewhat slower in Manitoba. Despite that reduction, the volume of agricultural output has increased by more than 50 per cent. As older farmers retired and as many of the younger farm people found employment in other industries, much of the land was absorbed into larger units and could then be operated with more powerful tractors, bigger combines, and heavier trucks. Because real output increased while the number of people employed in farming declined, output per unit of labour input grew at an average annual rate of nearly 5 per cent. Roughly half of that gain was associated with the reduction in farm employment, while the remainder was linked to productivity improvements from the application of new technology and better management techniques.

It is worth noting here that governments did not support the structural adjustment from farm to nonfarm employment and did not attempt to facilitate the transition of farm people to other occupations. On the contrary, government funding was used mainly to finance research that was conducted in agricultural experimental stations, in universities, and in research laboratories. The assistance was aimed at buying time and keeping people on the farm. Thus adjustment took place not as a result of policy but because the strong disincentive of low and uncertain farm incomes pushed farmers off the land.

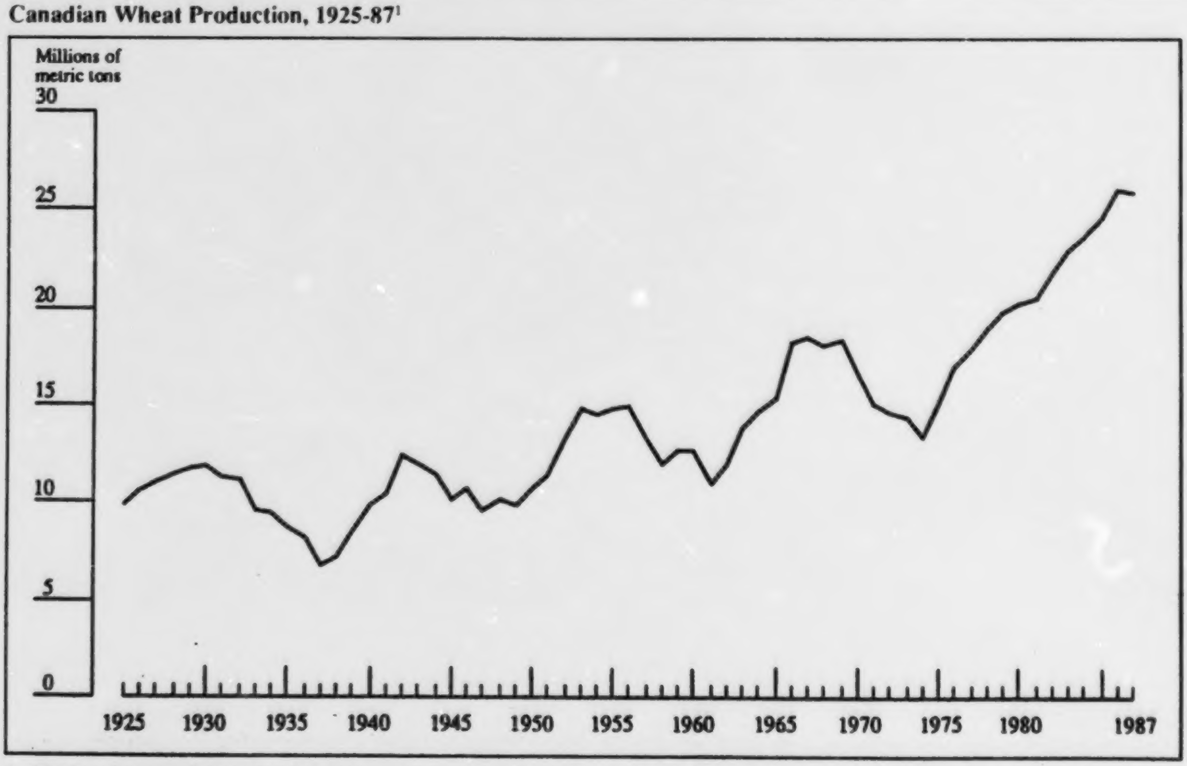
6 The Prairie Farm Crisis

The current crisis in the Prairie grain economy is the result of the oversupply of grains on world markets, the sharp decline in wheat and coarse-grain prices, and the current drought conditions in the Prairie region. That crisis is not a singular event, however, but part of a long-run pattern. Statistical evidence shows that global weather variations interact with both grain production and market prices in a distinct cyclical pattern. Indeed, the recurrence of periodic cycles in Canadian wheat production is quite striking. Since the early 1920s, production swings have occurred at intervals averaging 12 to 13 years (Chart 6-1). The most recent downturn came after a somewhat longer period of growth, resulting from a combination of factors, including the intervention of governments in agricultural production on a worldwide scale. In the mid-1980s, however, sporadic drought reduced crop yields in Canada, and the situation in 1988 recalls some of the worst crop years on record.

Such variations in market supplies, farm prices, and weather conditions have an impact on all Prairie farmers, but not all are affected in equal measure. The basic trends of Prairie agriculture that we examined in Chapter 5 were based on provincial averages and thus provided no information on the different experiences of different types of farms. In this chapter, we observe the extent to which the impact on farm finances varied between small and large

Chart 6-1

Canadian Wheat Production, 1925-87[1]



[1] The line plots annual changes in five-year moving averages, measured at year's end. Thus the measurement for 1987 is the average of the five-year period from 1983 to the end of 1987.

SOURCE Estimates by the Economic Council of Canada, based on data from Statistics Canada.

farms, between crop and livestock farms, between subregions in the same province, between full-time and part-time farmers, and between beginning and retiring farmers.

Financial Stress

Various surveys have been conducted to assess the extent of the financial crisis in the Canadian farm sector. Two of the most recent assessments were based on sample surveys using somewhat different estimation techniques. Both the Farm Credit Corporation (FCC) and Agriculture Canada used "debt-servicing capacity" to estimate the number of farms in financial difficulty. The FCC estimates, however, were based on a survey of farm borrowers, whereas those prepared by Agriculture Canada were drawn from a survey of lenders.

FCC Survey

In examining their debt-servicing capacity, the FCC defined farmers as "insolvent" if 40 per cent or more of their sales were used to service debt, if borrowing exceeded investment by 10 per cent, or if the farm equity was less than 15 per cent of the farm assets. Farmers were considered to be "in cash-flow difficulty" if 25 to 40 per cent of farm sales were used to service debt, if borrowing exceeded investment by 5 per cent, or if equity was between 15 and 40 per cent. All other farm operators were considered to be "stable." The FCC estimates were based on some 4,000 records of a 1984 Farm Survey, which was later updated to reflect the financial situation in January 1987.

Agriculture Canada Survey

Agriculture Canada distinguished three categories of farm borrowers: nonviable, deteriorating, and financially vulnerable. "Nonviable" farms were insolvent, with creditors having initiated, or intending to initiate, demand for payment; "deteriorating" farms were those which could be expected to be in a nonviable position within two years; and "financially vulnerable" farms were those which had fallen into payment arrears but were expected to continue as viable operations. The statistical estimates were derived from a March 1986 survey of agricultural lenders and involved contacting regional representatives of the Farm Credit Corporation, provincial credit agencies, and the commercial banks. The three categories of financial difficulty were discussed with these representatives, and the estimated percentage of clients in each category was determined in consultation with them. Some adjustments were made for double-counting, as the survey indicated that a number of farm borrowers had more than one account.

Both surveys showed that most Prairie farmers were in a financially "stable" situation and not in difficulty. According to the FCC estimates, 60 to 80 per cent of all farmers had no serious financial problems; 20 to 30 per cent had cash-flow difficulties; and 5 to 10 per cent were "insolvent." The Agriculture Canada estimates were more favourable: only 10 to 15 per cent were considered to be in financial difficulty; and only 2 to 3 per cent were in "nonviable" situations. In part, these variations stem from the differences in survey techniques and/or definitions. For example, the situations that Agriculture Canada defines as "deteriorating" and "nonviable" appear to correspond roughly to the "insolvent" category of the FCC estimates; in both surveys, those categories run at 5 to 10 per cent.

The Council's Analysis

The Council's own analysis provides estimates that fall somewhere between those two sets of results. It also yields, for the first time, detailed estimates of the financial stress, by type and size of farm and by farming region, within each province. As well, it shows how productivity performance is related to financial stress. To arrive at such estimates, we used the 1981 and 1986 census data and projected them, in combination with taxation data, to 1987. We assessed the magnitude of the financial crisis of Prairie farms by grouping some 130,000 farms into 20 different categories, according to debt/asset and debt/liquidity ratios. At the same time, we grouped them into "crop," "specialty," "livestock," and "mixed" farms; into subprovincial regions within each province; and into "small marginal," "medium-sized commercial," and "large corporate" farms. We then measured the degree of financial stress in 1985 – when the average price of wheat was still at $3.60 per bushel – and in 1987, when the price hit bottom.

Stress in 1985

According to our analysis, close to 30,000 of the 130,000 Prairie farmers – nearly one out of four – were in some financial difficulty in 1985. The degree of financial stress varied, however. Farm situations were considered to be "stable" when – after taking into account annual farm cash expenditures, including payments on the interest and principal of borrowings – sufficient family income was left to cover basic living expenses. By that definition, in 1985 over three-quarters of all Prairie farms were stable; that proportion was somewhat higher in Alberta and somewhat lower in Saskatchewan and Manitoba (Table 6-1). Farm situations were considered to be "vulnerable" when family income, aside from the withdrawal of savings, was not quite enough to meet basic family expenses. Our results show that 10 per cent of farm families fell into that category. Farm situations were considered to be "deteriorating" when little or no cash income was left for basic expenses, as was the case with 9 per cent of the farmers. When farm expenses actually exceeded the family income, a farm was considered "nonviable." That happened in 4 per cent of all cases – again less frequently in Alberta than in Saskatchewan or Manitoba. In all situations, the critical level of basic family living expenses was set at $14,000 per year – a level that roughly corresponded to the minimum cash required to feed, clothe, and house a family living in a rural area.

The Crisis of 1987

When grain prices dropped to disastrously low levels in 1987, the number of farms in financial difficulty rose from 23 to 28 per cent; that of nonviable operations, from 4 to 10 per cent. Cash expenditures exceeded family income on one out of every 10 Prairie farms. On these farms, living expenses could not be met from cash income but had to be financed from past savings, from new loans, or from government transfers. Even on financially deteriorating farms, with somewhat lower debt/asset ratios, cash expenses exceeded family income, on average. Although their financial status was somewhat better than that of the nonviable farms, they could only hold out for a limited time before ending up in a nonviable situation.

Farm Size

Some 60 per cent of all Prairie farms were commercial-size operations, with annual farm-product sales averaging close to $100,000. About half of them were operated by full-time farmers, aged between 35 and 64. Practically all of the remaining farmers (about 40 per cent) operated small-scale marginal farms, with annual sales of less than $20,000; half of them were full-time farmers. In addition, there was a small proportion (not quite 2 per cent) of large-scale corporate farms, with sales averaging around $500,000. Although incorporated, they were mostly family-owned and -operated.

In 1985, the commercial farms accounted for nearly 80 per cent of total farm sales. The remaining sales were

Table 6-1

Distribution and Net Cash Incomes of Farms, by Financial Status, Prairie Provinces, 1985 and 1987

	Manitoba		Saskatchewan		Alberta		All three provinces	
	1985	1987	1985	1987	1985	1987	1985	1987
	(Per cent)							
Distribution of farms:								
Stable	73	67	75	72	81	74	77	72
Vulnerable	12	12	10	11	8	9	10	10
Deteriorating	10	8	10	8	7	7	9	8
Nonviable	5	13	5	9	3	10	4	10
Total	100	100	100	100	100	100	100	100
	(Dollars)							
Net cash incomes:								
Stable	38,160	26,710	38,881	24,881	39,493	35,790	38,999	29,344
Vulnerable	23,743	13,571	22,581	9,546	26,839	24,185	24,193	15,206
Deteriorating	8,335	–10,158	7,868	–10,416	4,221	–7,278	6,827	–9,345
Nonviable	–1,107	–24,974	–4,045	–25,989	–7,716	–36,091	–4,864	–29,529
Total	31,414	15,658	32,187	15,688	34,447	24,521	32,888	18,957

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

split between the small marginal farms and the large corporate farms. The small marginal units, representing about 40 per cent of the total, produced less than the large corporate operations (Table 6-2).

One might expect that it was the families operating the small marginal farms who experienced the most serious financial difficulties and who lived in the most straitened circumstances. That was not the case, however. Indeed, our analysis shows that those who held off-farm jobs and operated small marginal farms on a part-time basis were less affected by the farm crisis than their counterparts operating commercial-size businesses (Table 6-3). Many of the former were spared, not only because they earned nonfarm income but also because they had not had easy access to farm loans in earlier years. As for marginal farmers who depended on the farm for most of their income, they managed to cope with the situation in 1985 but ran into very serious difficulties after the decline in grain prices in 1987.

Table 6-2

Distribution of Farms and Farm Sales, by Farm Size and by Status and Age Group of Operator, Prairie Region, 1985

	Number of farms	Farm sales
	(Per cent)	
Small marginal farms	38.0	8.6
Part-time farmers		
Aged less than 35	5.7	1.1
Aged 35 to 64	11.1	2.0
Full-time farmers		
Aged less than 35	4.4	1.2
Aged 35 to 64	16.8	4.3
Commercial farms	60.0	77.5
Part-time farmers		
Aged less than 35	2.2	2.3
Aged 35 to 64	3.7	4.3
Full-time partners		
Aged less than 35	7.5	9.7
Full-time farmers		
Aged less than 35	2.0	4.4
Aged 35 to 64	32.4	49.3
Elderly farmers		
Aged 65 and over	12.2	7.5
Large corporate farms	2.0	13.9
Mostly family-owned	1.5	9.4
Mostly owned by others	0.5	4.5
All farms	100.0	100.0

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

Some of the commercial farmers – both part-time and full-time – experienced similar difficulties. Their sales were, on average, over five times as large as those of marginal farmers, but they had borrowed more heavily and were now burdened by interest payments. In this group, young farmers just starting out were the hardest hit. By 1987, almost every second farmer below the age of 35 was in some financial difficulty, and every one in six or seven farmers had no cash income left to meet the family's living expenses after making payments on farm loans. By contrast, very few of the retiring farmers aged over 65 had financial problems. They were unscathed because very few of them had borrowed money, either for the farm operation or for the purchase of additional land. Among those who had, some had mortgaged their own farms to help their sons or daughters to buy land.

Farm Type

As stated above, in our analysis, we made a distinction between grain, livestock, specialty, and mixed farms. Enterprises were defined as either grain or livestock farms when at least two-thirds of their sales were derived, respectively, from grain or from livestock. Dairy and vegetable farms were treated as specialty farms. Farms producing both grains and livestock were defined as mixed farms when over one-third, and less than two-thirds, of their sales came from either grains or livestock.

In 1981, Prairie crop and livestock prices were about 30 per cent above the average for the previous 25 years. By 1985, the grain-price index had fallen about 10 percentage points below the index of livestock prices; by 1987, it had dropped even further. One might be tempted to conclude that mixed farms were in a stronger financial position than grain farms, but we found, in fact, that the percentage of mixed farms in financial difficulty was greater than that of grain farms (Table 6-4). Several factors contributed to this counter-intuitive result, including regional variations in agricultural production, productivity and cost variations, differences in off-farm incomes, and government programs.

Farming Regions

The Prairie region, which extends from the Rocky Mountains to the western tip of the Great Lakes, has a continental

Table 6-3

Distribution of Farms, by Financial Status and Size, and by Status and Age Group of Operator, Prairie Region, 1987

	Financial status				
	Nonviable	Deteriorating	Vulnerable	Stable	Total
			(Per cent)		
Small marginal farms	12	6	10	73	100
Part-time farmers					
Aged less than 35	9	6	14	71	100
Aged 35 to 64	4	2	7	87	100
Full-time farmers					
Aged less than 35	23	10	14	53	100
Aged 35 to 64	15	6	10	69	100
Commercial farms	9	9	11	72	100
Part-time farmers					
Aged less than 35	14	15	22	49	100
Aged 35 to 64	8	9	14	69	100
Full-time partners					
Aged less than 35	15	18	18	48	100
Full-time farmers					
Aged less than 35	15	14	16	56	100
Aged 35 to 64	8	8	9	75	100
Elderly farmers					
Aged 65 and over	6	3	7	84	100
Large corporate farms	16	9	11	64	100
Mostly family-owned	12	9	12	67	100
Mostly owned by others	27	9	10	54	100
All farms	10	8	10	72	100

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

climate, with cold winters, short summers, and sparse precipitation. It contains three-quarters of Canada's farmland. The climate and the soil favour the production of high-quality, hard spring wheat. Alberta produces more cattle than either of the other two provinces, and Saskatchewan grows two-thirds of Canada's wheat, as well as large quantities of other grains. Farming in Manitoba is somewhat more diversified, mostly as a result of the higher rainfall, and its production pattern falls between those of the other two provinces.

These provincial characteristics are reflected in the provincial distribution of the different types of farms. Most of the Prairie farmers derive over half of their farm income from grain sales – somewhat less than half of the farmers in Alberta, over half of those in Manitoba, and nearly three-quarters of those in Saskatchewan (Table 6-5). The numbers of livestock farmers are correspondingly much smaller.

In Alberta, where traditionally more farmers have specialized in livestock, there were about as many farmers in a nonviable financial situation in 1987 as there were in Saskatchewan, where most farmers specialized in grains (Table 6-6). The proportion of farmers in that situation in Manitoba was slightly higher. More significantly, in all three provinces, a larger proportion of operators of mixed farms – those whose livestock sales accounted for one-third to two-thirds of total farm sales – than of grain-farm operators were in very serious financial difficulty.

To analyse the subregional farm characteristics, we divided the Prairies into 22 districts – seven in Alberta, nine in Saskatchewan, and six in Manitoba (see map on p. 50). These districts can be fairly readily grouped into the four major soil zones: the brown-soil zone in southeastern Alberta and southwestern Saskatchewan; the dark-brown-soil zone, surrounding it to the north; the black-soil zone,

Table 6-4

Distribution of Farms, by Financial Status and Farm Type, Prairie Region, 1985 and 1987

	Financial status				
	Nonviable	Deteriorating	Vulnerable	Stable	Total
	(Per cent)				
1985					
All farms	4	9	10	77	100
Grain	2	8	9	81	100
Livestock	3	8	9	80	100
Specialty	4	10	13	73	100
Mixed	11	13	13	63	100
1987					
All farms	10	8	10	72	100
Grain	8	8	10	74	100
Livestock	9	5	10	76	100
Specialty	11	8	15	67	100
Mixed	17	10	12	62	100

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

surrounding the two in rainbowlike fashion, from western Alberta through central Saskatchewan and most of Manitoba; and finally, the grey-soil zone, reaching from northern Alberta and northern Saskatchewan to northern and eastern Manitoba.

The district analysis, summarized in Table 6-6, shows that the percentage of nonviable operations – those whose farm cash operating expenses exceeded family cash income by a large margin – was highest for mixed farms in virtually all regions. There was no obvious association between the four soil zones and the financial viability of farm operations. That was partly because the census data did not reflect the long-run trends in yields and partly because the farm size, farm capital, and other farm inputs were very important determinants of farm income that overrode some of the soil differences.

Table 6-5

Distribution of Farms, by Type, Prairie Provinces, 1985

	Manitoba	Saskat-chewan	Alberta
	(Per cent)		
Grain	54	71	42
Livestock	17	8	30
Specialty	9	2	8
Mixed	20	19	20
Total	100	100	100

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

Causes of Financial Stress

Although all Prairie farmers have been exposed to the cost/price squeeze, most of them – three out of four – are not in financial difficulty. The others – 23 per cent in 1985 and 28 per cent in 1987 – have been experiencing some hardship, however. Within this group, the number of farmers in nonviable situations reached 10 per cent in 1987. Their situation results from a number of factors, including an excessive debt burden and poor productivity performance.

Farm Debt

In 1987, farmers in serious financial difficulty paid, on average, three to four times more in interest charges than did those in a more stable situation (Table 6-7). In addition, they did not have sufficient off-farm income to cover their living expenses and to service their debt.

Table 6-6

Incidence of Financially Nonviable Farms in the Prairie Provinces, by Farming Region and by Type of Farm, 1987[1]

		Type of farm			
	Soil zone[2]	Grain	Livestock	Mixed	All types
			(Per cent)		
Manitoba		**10**	**12**	**19**	**12**
1	B	9	10	17	12
2	B	13	25	29	20
3	B	12	20	23	16
4	B	9	8	13	9
5	G	19	10	--	22
6	G	14	13	33	18
Saskatchewan		**7**	**11**	**17**	**9**
1	DBR	6	10	21	11
2	DBR	3	7	14	5
3	BR	5	16	19	9
4	BR	5	14	19	9
5	B	9	11	21	12
6	DBR	5	9	12	7
7	DBR	8	17	20	11
8	B	7	9	17	9
9	B	8	8	9	9
Alberta		**10**	**7**	**16**	**10**
1	BR	10	8	17	12
2	DBR	14	8	18	13
3	B	15	6	17	11
4	DBR	9	9	15	11
5	B	6	5	11	7
6	G	7	8	15	9
7	G	9	13	22	12
Prairie region		**8**	**9**	**17**	**10**

[1] These estimates express the proportion of nonviable farms in each soil zone and each farm category. They are projected from the 1986 Census of Agriculture on an individual farm basis, with adjustments being made for price changes in major crops and livestock. No allowance is made for changes in crop acreages or livestock numbers, and no adjustment is made for changes in crop yields. The estimates only reflect the price changes in output and not in inputs.

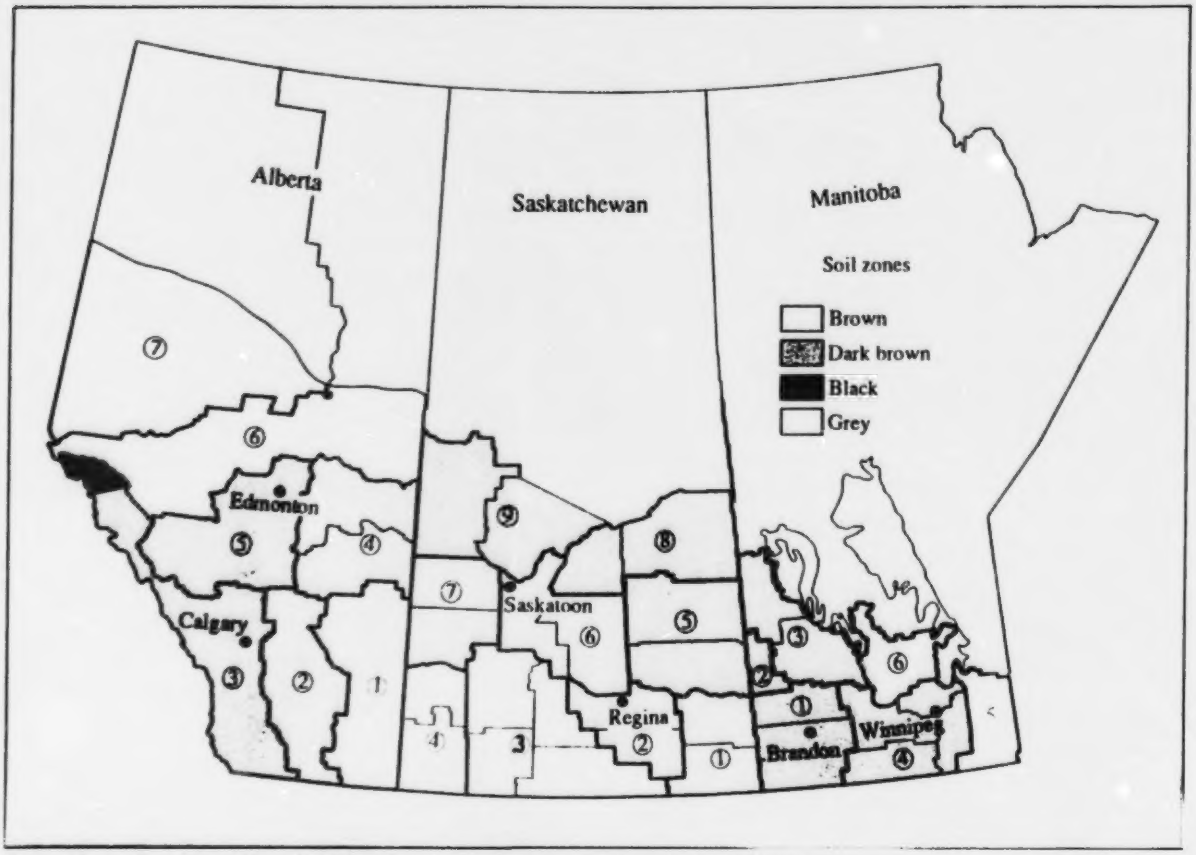
[2] BR = brown-soil zone
DBR = dark-brown-soil zone
B = black-soil zone
G = grey-soil zone.

SOURCE Estimates by the Economic Council of Canada, based on the 1986 Census of Agriculture.

Farm Productivity

On average, Prairie farms experience constant or increasing returns to scale. Constant returns to scale imply that a doubling of inputs such as land, labour, capital stock, and materials would double the output on the average farm. Increasing returns imply that a doubling of those inputs would more than double farm output – provided, of course, that all inputs (including labour and management) are increased in the same proportion. Often, in practice, that cannot be done. An owner/operator may run a one-person farm more efficiently without hired labour than he could a larger unit with hired labour. This explains, in part, why small and large farms exist side by side. It also explains why farmers continue to expand their farm acreage: they are trying to capture the greater returns that accrue from operating a larger farm.

Subprovincial Farm-Production Regions and Soil Zones in the Prairie Provinces



NOTE The numbers denote subprovincial farming regions and correspond to those listed in Table 6-6.

In addition to the greater output and higher returns that come with large-scale operations, further gains can be derived from the more efficient use of farm resources. As in other industries, the efficiency with which farm resources are used can be measured by total factor productivity, which quantifies the efficiency with which they are converted into farm output. In this context, the efficiency of marginal farms is compared with that of a standard commercial farm; the efficiency of livestock and mixed farms, with that of a standard grain farm; and the efficiency of financially troubled farms, with that of stable farms.

The factor productivity of small marginal farms was much lower than that of commercial farms; it was generally less than half in 1980 but somewhat higher in 1985 (Table 6-8). Marginal farmers produced less, not only because they cultivated less land, had less capital, and purchased smaller quantities of fertilizer, herbicides, and other material inputs but also because they used their limited resources much less efficiently.

On livestock and mixed farms, factor productivity was, on average, lower than on grain farms; in other words, capital and labour inputs on these farms did not yield the same output as on grain farms (Table 6-9). When one takes account of the fact that some of the farm labour on the livestock farms was "free" because it could not have been employed elsewhere during the winter months, the differences in factor productivity narrow slightly but do not disappear. On average, the value of farm-product sales on livestock and mixed farms exceeded that of grain farms by substantial margins, but capital and material expenses in those two categories were even higher. This lowered their net farm cash income in comparison with that of the grain farms.

Table 6-7

Interest Payments of Stable and Nonviable Farms, by Size and Type of Operator, Prairie Region, 1987

	Interest payments			
	Amount		As a proportion of farm cash expenses	
	Stable	Nonviable	Stable	Nonviable
	(Dollars)		(Per cent)	
Small marginal farms	1,352	5,556	9	16
Part-time farmers				
Aged less than 35	1,852	6,868	13	21
Aged 35 to 64	1,702	5,913	11	16
Full-time farmers				
Aged less than 35	1,255	6,504	8	18
Aged 35 to 64	906	4,836	6	14
Commercial farms	5,129	19,217	8	15
Part-time farmers				
Aged less than 35	6,510	18,999	12	19
Aged 35 to 64	6,566	20,935	11	17
Full-time partners				
Aged less than 35	7,005	17,844	11	17
Full-time farmers				
Aged less than 35	9,968	24,628	9	15
Aged 35 to 64	6,128	22,947	9	14
Elderly farmers				
Aged 65 and over	1,040	4,763	4	7
Large corporate farms	20,111	46,077	5	8
Mostly family-owned	19,870	55,485	6	10
Mostly owned by others	21,010	33,935	3	6
All farms	3,937	13,884	8	14

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

In addition, the analysis shows that factor productivity was lower on financially troubled farms than on stable farms (Table 6-10). Even after taking into account the variations in productivity attributable to differences in the type and size of farm, the soil zone, the use of inputs, and the age of the farm operator, the productivity on these farms was lower than on stable farms, and it was lowest on the least viable farms.

This productivity analysis refers to the year 1985, when grain prices were still quite favourable. The situation changed in the next two years, as grain prices dropped and livestock prices rose. Thus a productivity analysis for 1987 would probably alter the results and show livestock production as more profitable. Under normal market conditions, however, we may expect lower productivity on livestock farms. That is substantiated not only by a similar analysis for 1980, when grain and livestock price indexes were at more comparable levels, but also by other findings. The unfavourable productivity performance on mixed and livestock farms suggests that it will not be easy for grain farmers to diversify into livestock production.

The Diversification Option

On the Farm

Diversifying out of wheat production into other crops such as canola, lentils, peas, vegetables, or alfalfa seed can, at times, be very profitable. Except for canola, however, the opportunities for such diversification are limited at present,

Table 6-8

Factor Productivity[1] of Marginal Farms as a Proportion of Factor Productivity of Standard Commercial Farms, Prairie Provinces, 1980 and 1985

	Manitoba	Saskatchewan	Alberta
		(Per cent)	
1980			
Marginal farms operated by:			
Part-time farmers			
Aged less than 35	44	43	41
Aged 35 to 64	44	41	41
Full-time farmers			
Aged less than 35	51	51	44
Aged 35 to 64	50	52	44
1985			
Marginal farms operated by:			
Part-time farmers			
Aged less than 35	80	66	58
Aged 35 to 64	71	61	54
Full-time farmers			
Aged less than 35	80	67	60
Aged 35 to 64	73	62	57

[1] The factor-productivity estimates are derived from a production-function analysis of census farms, with allowances being made for variations in regions, farm capital, labour, material inputs, acreage, land quality, farm organization, and farm financial situation. A standard commercial farm is defined as a grain farm operated on a full-time basis by a farmer aged between 35 and 64.

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

Table 6-9

Relative Productivity and Other Characteristics of Livestock and Mixed Farms,[1] Prairie Provinces, 1985

	Livestock farms	Mixed farms
	(Per cent)	
Factor productivity[2]		
Manitoba	90	93
Saskatchewan	84	90
Alberta	82	86
Other characteristics		
Product sales	141	120
Farm inputs		
Acreage	122	127
Value per acre	76	84
Labour (month)	125	131
Fixed capital	146	140
Materials	163	128
Net farm cash income	60	90

[1] Both the productivity estimates and the other characteristics are measured as a percentage of the figures for grain farms (i.e., grain farms = 100).

[2] The factor-productivity estimates are derived from a production-function analysis of census farms, with allowances being made for variations in regions, farm capital, labour, material inputs, acreage, land quality, farm organization, and farm financial situation.

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

because the climate and soils of the Prairie region make for a narrow range of choices, and the demand for most of those specialty crops is very limited, compared with that for wheat.

When grain prices are down and livestock prices are up, it may seem that Prairie farmers could benefit from raising more livestock. From the foregoing productivity analysis, it is not at all clear, however, that switching into livestock production or going into mixed farming would solve the farm-income problem.

Although the analysis covered all Prairie farmers, the preceding results pertain to specific farm situations. It is of interest, however, to examine how the performance varied over the whole range of farms, from high- to low-cost producers. To this end, we compared the cash cost per dollar of farm-product sales for the four types of census farms in 1985/86 (Table 6-11). We found that the cost per dollar was generally higher on livestock and mixed farms than on grain farms, over the whole range of producers. But we also found that the cost differences between farm types gradually diminished as we went from higher- to lower-cost producers. In Manitoba, the operations of some livestock farmers were more cost-effective than those of the grain farmers. The implication is that there are significant cost economies to be achieved on livestock farms and that it is important to exploit them. Capturing such cost economies is risky, however, and requires superior management skills.

This cost picture is influenced by government programs that tend to favour grain producers over livestock producers. If, for example, payments made under the *Western Grain Stabilization Act* are excluded from the calculation of these cost estimates, the difference between the grain and livestock cost ratios diminishes (Table 6-12).

Table 6-10

Relative Resource Productivity[1] of Farms with Financial Problems, Prairie Provinces, 1985

	Manitoba	Saskat-chewan	Alberta
		(Per cent)	
Nonviable			
Grain	84	81	82
Livestock	94	91	91
Specialty	85	84	88
Mixed	90	90	93
All farms	89	85	90
Deteriorating			
Grain	83	85	85
Livestock	89	88	94
Specialty	89	87	91
Mixed	88	91	96
All farms	88	87	92
Vulnerable			
Grain	96	95	98
Livestock	97	95	99
Specialty	103	92	101
Mixed	93	93	99
All farms	97	93	100

1 The factor-productivity estimates are derived from a production-function analysis of census farms, with allowances being made for variations in regions, farm capital, labour, material inputs, acreage, land quality, farm organization, and farm financial situation. The estimates are measured as a percentage of the figures for financially stable farms (i.e., stable farms = 100).

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

The low-cost effectiveness of livestock farms is further illustrated by an analysis of returns to investment in wheat and livestock production, based on selected farms and covering the period 1971-87 (Table 6-13). It shows that over a period of nearly two decades, year-to-year returns to investment in the major livestock enterprises were generally lower than in wheat production. Year-to-year variations in returns to investment in livestock were positively, but fairly weakly, correlated with those in wheat production. Cow/calf operations were an exception to that pattern, in that they varied inversely but yielded lower and less stable returns than wheat.

Off the Farm

Even if the prices for wheat and other grains should increase over the next few years, that will not solve the low-income problems faced by the 50,000 marginal farms. Today, some 28,000 such farms are operated by full-time farmers, who would probably be unable to cope without the off-farm income of other family members. The future income of these farm families will depend very much on the opportunities for nonfarm employment. The outlook for such employment is not very favourable in some of the more outlying areas, where the rural population can be expected to continue to decline. In other areas, of course, the growth of energy, mining, and specialized manufacturing activities may offer welcome opportunities for further family-income diversification.

What of the Future?

Given the typical boom-and-bust cycle of world demand and supply, it is impossible to predict the future with any degree of certainty. If we assume, however, that the average long-term demand and supply trends of the period 1971-86 will persist into the years to come, then the ensuing cost/price squeeze will cause a continued decline in the number of farms. Between now and the year 2000, the number of farms in the Prairie provinces is expected to decrease from 130,000 (in 1985) to 115,000 (or possibly as low as 95,000). Most of that drop will come from the decline in the number of full-time farmers, as the number of part-time farmers and corporate farmers is expected to increase (Chart 6-2).

The total volume of Prairie farm output can be expected to increase by roughly 40 per cent, whereas farm employment will decline by 12 per cent; the number of farms is also expected to drop by 15 per cent. At the same time, the average farm size is likely to increase from 950 acres to over 1,100 acres. The reduction in farm employment will be somewhat less than the reduction in the number of farms, because the larger number of corporate farms will require some additional labour. Those requirements can be easily met, however, by the additional part-time farmers and will not provide employment opportunities for all of those who discontinue farming between now and then. Prairie farm output is expected to increase; by the year 2000, less than 10 per cent of the total will be produced by the small marginal farmers; over 20 per cent, by the corporate (but mostly family-owned) farms; and nearly three-quarters, by the medium-sized commercial farms (Chart 6-3).

These are rather optimistic estimates. There is no assurance that the current Prairie farm crisis will not accelerate the adjustment process. In either case, the burden of such structural adjustment will not be shared equally among all farmers. Often the adjustment from farm to nonfarm employment occurs between generations, when

Table 6-11

Cash Cost per Dollar of Farm Product Sales, by Type of Farm and by Percentile, Prairie Provinces, 1985/86, Excluding Interest Payments on Farm Loans

		Type of farm			
	Percentile	Grain	Livestock	Specialty	Mixed
		(Dollars)			
Manitoba	10	0.98	1.29	1.09	1.10
	20	0.92	1.08	1.04	0.95
	30	0.89	1.01	0.93	0.90
	40	0.81	0.94	0.78	0.84
	50	0.73	0.89	0.69	0.75
	60	0.68	0.81	0.65	0.71
	70	0.68	0.75	0.60	0.67
	80	0.65	0.72	0.60	0.67
	90	0.64	0.69	0.59	0.66
	95	0.64	0.65	0.55	0.64
Total number of farms	100	12,915	4,075	2,035	4,700
Saskatchewan	10	0.90	1.18	1.11	1.01
	20	0.85	1.04	0.91	0.95
	30	0.79	0.96	0.84	0.88
	40	0.73	0.92	0.78	0.83
	50	0.65	0.86	0.74	0.73
	60	0.62	0.78	0.69	0.65
	70	0.61	0.75	0.65	0.63
	80	0.56	0.71	0.61	0.63
	90	0.55	0.69	0.58	0.62
	95	0.53	0.68	0.55	0.60
Total number of farms	100	42,570	5,020	1,395	11,315
Alberta	10	1.22	1.36	1.38	1.31
	20	1.06	1.30	1.22	1.10
	30	1.03	1.06	1.05	1.03
	40	0.92	0.98	0.92	0.88
	50	0.76	0.91	0.81	0.78
	60	0.72	0.86	0.71	0.72
	70	0.67	0.80	0.67	0.70
	80	0.62	0.75	0.62	0.67
	90	0.62	0.72	0.60	0.66
	95	0.62	0.68	0.55	0.65
Total number of farms	100	20,925	15,000	3,960	9,605

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

young members of the farm family become aware of the greater income opportunities that exist in the nonfarm sector. But at times, the burden falls on those who, because of poor management or bad luck, cannot hang on to the farm any longer and must find a way out, with little or no help from anyone.

Summary

We found that low and unstable farm incomes, combined with depressed farm prices and drought conditions, have led to the latest financial crisis faced by Prairie farmers. In their attempt to keep their farm incomes growing, they expanded

Table 6-12

Cash Cost per Dollar of Farm Product Sales, by Type of Farm and by Percentile, Prairie Provinces, 1985/86, Including Interest Payments on Farm Loans but Excluding Payments Received under the *Western Grain Stabilization Act*

		Type of farm			
	Percentile	Grain	Livestock	Specialty	Mixed
		(Dollars)			
Manitoba	10	1.43	1.84	1.49	1.53
	20	1.21	1.31	1.18	1.35
	30	1.07	1.22	0.94	1.17
	40	0.92	1.04	0.82	0.99
	50	0.80	0.90	0.79	0.86
	60	0.74	0.76	0.70	0.75
	70	0.72	0.74	0.67	0.73
	80	0.71	0.71	0.66	0.71
	90	0.70	0.68	0.66	0.67
	95	0.69	0.67	0.59	0.65
Total number of farms	100	12,915	4,075	2,035	4,700
Saskatchewan	10	1.42	1.76	1.52	1.60
	20	1.14	1.35	1.24	1.37
	30	1.07	1.22	1.08	1.19
	40	0.85	1.06	0.94	1.02
	50	0.74	0.89	0.85	0.88
	60	0.68	0.78	0.74	0.73
	70	0.67	0.75	0.70	0.71
	80	0.63	0.72	0.68	0.69
	90	0.62	0.71	0.67	0.67
	95	0.61	0.66	0.61	0.62
Total number of farms	100	42,570	5,020	1,395	11,315
Alberta	10	1.65	1.64	1.64	1.88
	20	1.44	1.43	1.38	1.47
	30	1.30	1.36	1.21	1.32
	40	1.01	1.06	0.98	1.06
	50	0.89	0.88	0.83	0.87
	60	0.80	0.84	0.75	0.75
	70	0.72	0.78	0.72	0.72
	80	0.69	0.77	0.66	0.72
	90	0.68	0.73	0.66	0.70
	95	0.63	0.70	0.63	0.67
Total number of farms	100	20,925	15,000	3,960	9,605

SOURCE Estimates by the Economic Council of Canada, based on special tabulations by Statistics Canada.

the size of their operations; many who borrowed heavily to buy land at inflated prices in the late 1970s are now in serious financial difficulty. But that was only part of the problem: the financial crisis was hardest on some of the least productive farmers.

Farmers in financial difficulty ran their farm operations less efficiently and employed their farm resources less effectively than those in financially viable and stable situations. Farmers in the most serious financial situation were among the least efficient.

Table 6-13

Return on Investment[1] in Wheat and Livestock, Prairie Region, 1971-87

		Beef cattle		Hogs	
	Wheat	Cow/calf	Feed lot	Sow weanling	Hog finishing
			(Per cent)		
1971	-2	5	11	--	--
1972	18	20	7	14	21
1973	49	29	5	16	29
1974	40	-42	12	4	18
1975	48	-59	3	33	44
1976	20	-29	-16	22	35
1977	27	-11	-13	22	32
1978	22	94	-4	22	29
1979	28	54	-4	-2	8
1980	38	-16	5	-9	11
1981	11	-26	12	-1	15
1982	2	-10	2	21	20
1983	6	12	-4	-4	10
1984	-9	3	-4	-9	19
1985	-14	-1	-3	-2	15
1986	-8	23	-14	11	12
1987	-10	14	-17	9	7
Average	16.6	3.5	-1.4	8.5	19.2

[1] The costs of production are based on the Saskatchewan Agriculture Farm Business Management Data Manual (1988) and are indexed backward over time.

SOURCE Based on W. J. Brown, "A review of the economics of farm enterprise size and an economic analysis of farm diversification," a background paper prepared for the Economic Council of Canada, May 1988.

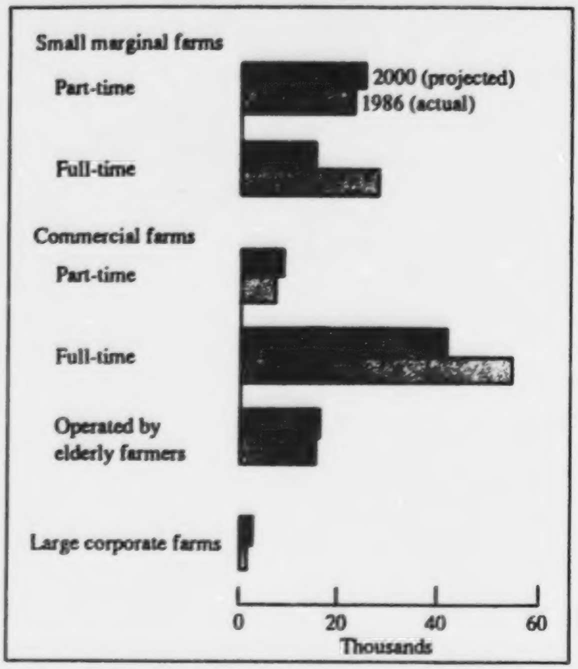
Nearly 40 per cent of all farmers ran marginal operations, together producing less than 10 per cent of Prairie farm output. Financially, many of them were on the critical list, not because of their excessive borrowing but because their farm income was too low to provide an adequate standard of living even before the bottom fell out of the wheat market. They operated small farms, had very little farm capital, and used their limited resources very inefficiently. To make matters worse, they had little or no income from nonfarm sources.

It follows that the farm crisis will pass if grain prices continue to recover, but many of the financial problems of farmers will remain. Should grain prices slide back, diversification into livestock or mixed farming will not be the panacea that some have hoped for. A livestock or mixed-farming operation has to be large enough to capture the gains that come with a more efficient use of resources. Most marginal grain farmers are unlikely to have the capital or managerial know-how to pursue that route of diversification successfully.

Barring any unforeseen changes in international trade and domestic farm policy, we expect that past adjustment trends will continue into the future. Such adjustment, as reflected in the number and output of farms, will vary with their size: the number of small and medium-sized farms will decline and that of corporate farms will increase.

Chart 6-2

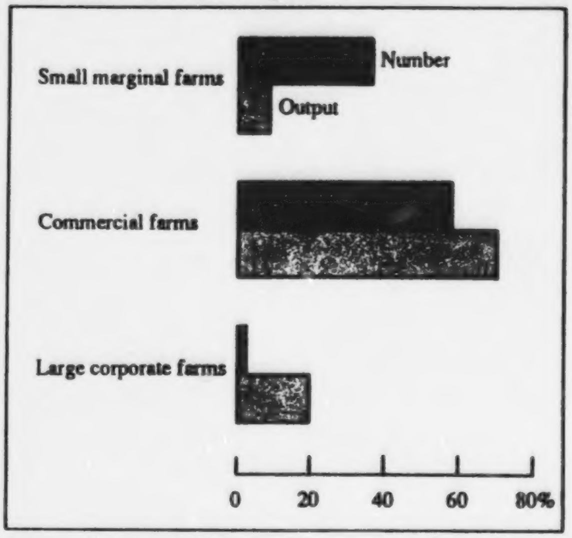
Number of Prairie Farms, by Type, 1986 and 2000



SOURCE: Estimates by the Economic Council of Canada, based on data from Statistics Canada.

Chart 6-3

Distribution of Farms and Farm Output, by Type of Farm, Prairie Region, Year 2000



SOURCE: Estimates by the Economic Council of Canada, based on data from Statistics Canada.

7 Canadian Policies towards Prairie Agriculture

Canadian governments have accepted a responsibility towards the Prairie grain economy ever since the end of the 19th century. In the early years, they concentrated their attention on land settlement and on the handling, transportation, and marketing of grain. In 1897, for example, the federal government required the Canadian Pacific Railway to lower its rates on grain carried to the Great Lakes. This was followed by the adoption of the *Manitoba Grain Act* in 1900 and the *Canada Grain Act* in 1912, which were intended to ensure equality of access to markets, the protection of producers' rights, and product quality. After the First World War, farmers fought what they perceived as the abuses of the Winnipeg Grain Exchange and, in 1935, persuaded the government to reinstate the Canadian Wheat Board, which had been set up in the aftermath of the war but had been abolished in 1920.

Support for grain transportation and marketing did not ensure stable farm incomes. In 1961, crop insurance was introduced to cover the income losses caused by poor weather, plant disease, and other natural hazards. Since then, a number of different programs have been introduced by the federal government and the provinces to assist Prairie grain farmers, thereby recognizing the need for society to share some of the risks of export-oriented production.

Despite the unprecedented increase in government expenditures on Prairie agriculture, many farmers in the region continue to suffer from severe economic hardship and to face an uncertain future. To understand why this is so, it is important to understand why governments intervene so actively in western agriculture, to describe some of the major programs for the grain sector, and to assess their effects.

Why Does Government Intervene?

Most industrialized countries support agriculture, and most justify their support with similar sets of arguments. In Canada, the many reasons advanced to explain government support for Prairie agriculture boil down to four basic arguments: recognition of the contribution of farmers to the economy, the need to spread the risks to which they are exposed, a desire to support the family farm, and a commitment to maintaining a rural infrastructure.

Prairie farmers make an important contribution to Canadian society by providing low-cost food. Canadians spend only 14 to 15 per cent of their incomes on food, compared with over 20 per cent in the European Community and even more in Japan. Unlike those countries, Canada has never been haunted by the fear of being cut off from food supplies. Nevertheless, food producers in this country touch a chord in the hearts of voters and politicians. That instinctive sympathy is not irrational. After all, consumers have benefited more than producers from the strides in agricultural productivity, which have helped them to spend an ever declining share of their income on basic foods. Farming is a highly competitive activity, and productivity increases are quickly reflected in lower prices. By contrast, in many sectors of manufacturing – where patents, trademarks, and other forms of market identification and protection exist – productivity increases are more likely, in the short run, to be reflected in profits or wage gains; only in the long run are they also reflected in lower prices. In that respect, farmers are at a disadvantage vis-à-vis other sectors, and that is why they deserve special attention.

In addition, grain producers in the Prairie provinces make a significant contribution to Canada's trade balance and thus to the stability of the Canadian dollar, which benefits the nation through lower import prices.

Uncertainty is a way of life for farmers. The level and quality of their products, and hence their incomes, are affected by such factors as the weather, pests, and crop and livestock diseases. Those who produce for foreign markets are subject to additional risks arising from both weather and policy changes in other countries. In the short run, Prairie farmers cannot differentiate their product in a way that would enable them to raise their prices; nor can they change their mode of production to take advantage of changing tastes. Even in the long run, there are few alternative uses for their land and equipment. Switches between different crops are possible, but moving from crop to livestock production is much more difficult. In any case, the prices of Prairie commodities tend to move together, as noted earlier. The scope for shifting farming activity towards products whose prices are not interrelated and that have a higher value-added is limited.

It can be argued that other small and medium-sized businesses, particularly in the construction industry, are even riskier than Prairie farming since they have higher rates of failure. But in other occupations, family and business assets are rarely as concentrated in one vehicle as are the assets of Prairie producers in the family farm. In addition, Prairie farmers probably have less choice in responding to production and marketing risks than do the owners of small urban businesses.

The main production unit in Prairie agriculture, as noted in Chapter 5, is the family farm operated by its owners – usually a husband and wife, aided by their children. Many Canadians and others believe, correctly or not, that this was the standard production unit in western society during the formative period of democracy and self-government. They see a link between a prosperous agricultural industry comprised of family farms and a resilient, free society. As a consequence, they believe that farms should not become giant corporate agribusinesses, because that would lead to the disappearance of both the family owner/operator and the rural communities in the Prairie provinces.

The desire to settle the Canadian Prairies and to build up communities in the region led early Canadian governments to assist railway construction and settlement. Today, the dependence of many rural Prairie communities and transportation centres on the prosperity of the farm sector is an important factor in Canadian agricultural policy.

Federal Support Programs

There is a wide range of federal programs directed at the different activities that make up Prairie agriculture – production, transportation, and marketing. Some programs lead to unconditional, direct public expenditures; others take the form of matching payments, cash advances, and credit support, the level of which depends on the contribution of farmers. In addition, regulatory bodies provide grading, quality control, and health inspection, while government-backed research and development assists in the improvement of crop varieties and livestock production, and contributes to disease control and soil rejuvenation.

In recent years, the major expenditures have focused on the output side – i.e., on income and price support for the grain sector. The main programs through which this assistance has been channeled are crop insurance, income stabilization under the *Western Grain Stabilization Act*, and deficiency payments under the Special Canadian Grains Program.

Recent levels of federal spending on Prairie agriculture have been very high. In addition to the principal items listed in Table 7-1, other major outlays have included the $111-million write-off of the deficit in the Canadian Wheat Board's barley accounts in 1986/87 and the $100-million cash infusion into the Farm Debt Review Boards in 1987. Extraordinary expenditures are expected to be much lower in 1988, but they will nonetheless include $400 million towards the recovery of the Farm Credit Corporation and the possible payment of $227 million to terminate the Two-Price Wheat Program.

These expenditure levels are unprecedented. Before the 1980s, only federal expenditures on the transportation of Prairie grain were of a substantial level. During the current decade, spending on grain-transportation assistance and five other programs rose considerably, reaching over $1 billion in 1984. In 1981 constant dollars, that threshold was crossed in 1985 (Chart 7-1).

Public outlays of such magnitude are clearly unsustainable, nor would their prolongation be in the interests of Prairie farmers. Such massive government intervention for a particular group inevitably arouses criticism from other groups in the industry. *Ad hoc* salvage programs also obscure market signals and tend to reduce the responsibility of individual managers.

It is important, therefore, to note that the recent need for *ad hoc* rescue operations has resulted, at least in part, from Canada's policy of not guaranteeing its grain farmers a predetermined level of price support, such as that provided in the United States and in the European Community. American and European farmers know before they seed their crops that prices will not fall below certain thresholds. As noted in Chapter 3, this system of guaranteed price support was largely responsible for the grain surplus in the early 1980s. By eschewing predetermined price guarantees, Canada has followed a more market-oriented approach, but in so doing it has been led to adopt a series of piecemeal compensatory measures.

Crop Insurance

Ever since 1961, federal and provincial governments have provided crop insurance to compensate farmers for yield losses caused by natural hazards such as drought, frost, floods, fire, hail, insects, and plant diseases. The list

Table 7-1

Federal Support to Farmers in the Prairie Provinces, 1987

	Manitoba	Saskatchewan	Alberta	Total
		(Millions of dollars)		
Direct payments[1]				
Western Grain Stabilization Act (net)	255	743	360	1,358
Agricultural Stabilization Act (net)	--	–3	–6	–9
Crop insurance (net)	17	41	54	112
Dairy subsidy	11	7	19	37
Other direct payments[2]	1	7	23	31
Rebates	26	53	116	195
Special Canadian Grains Program	155	408	252	815
Total (net)	465	1,256	818	2,539
Other major liabilities				
Farm Credit Corporation (cumulative deficit)[3]	107	340	153	600
Payments to railways[4] under the *Western Grain Transportation Act*	136	483	251	870
Total direct payments, rebates, and liabilities	708	2,079	1,222	4,009
		(Thousands of dollars)		
Payment per farmer (self-employed)	28	36	26	31

1 Net payments are total payments less farmers' contributions.

2 Includes such payments as compensation for animal losses and damage to waterfowl.

3 The cumulative deficit is attributed to the Prairie provinces on the basis of their respective shares of FCC loan arrears during 1987/88.

4 Net of the $71.7 million that was to be refunded to the federal government in 1987/88.

SOURCE Statistics Canada, *Agriculture Economic Statistics*, Cat. 21-603; and Farm Credit Corporation, *Annual Report*, various years; and data from Transport Canada, the Canada Grains Council, and the National Transportation Agency of Canada.

of crops eligible for insurance has been expanding since the inception of the program. For example, Saskatchewan currently provides insurance coverage for 18 different crops, including wheat, oats, barley, flax, canola, rye, sunflowers, mustard, field peas, lentils, and canary seed.

The programs differ slightly among the three Prairie provinces, but they generally offer farmers a choice of 60- or 70-per-cent coverage of the historical average yield for their risk area and soil class. Coverage levels and premiums are adjusted upward or downward to take account of a farmer's claim record. Insurance is optional, and farmers can choose which of their crops they will insure; in Alberta and Saskatchewan, they can also decide whether their coverage is to be based on their own yields or on the average area yield.

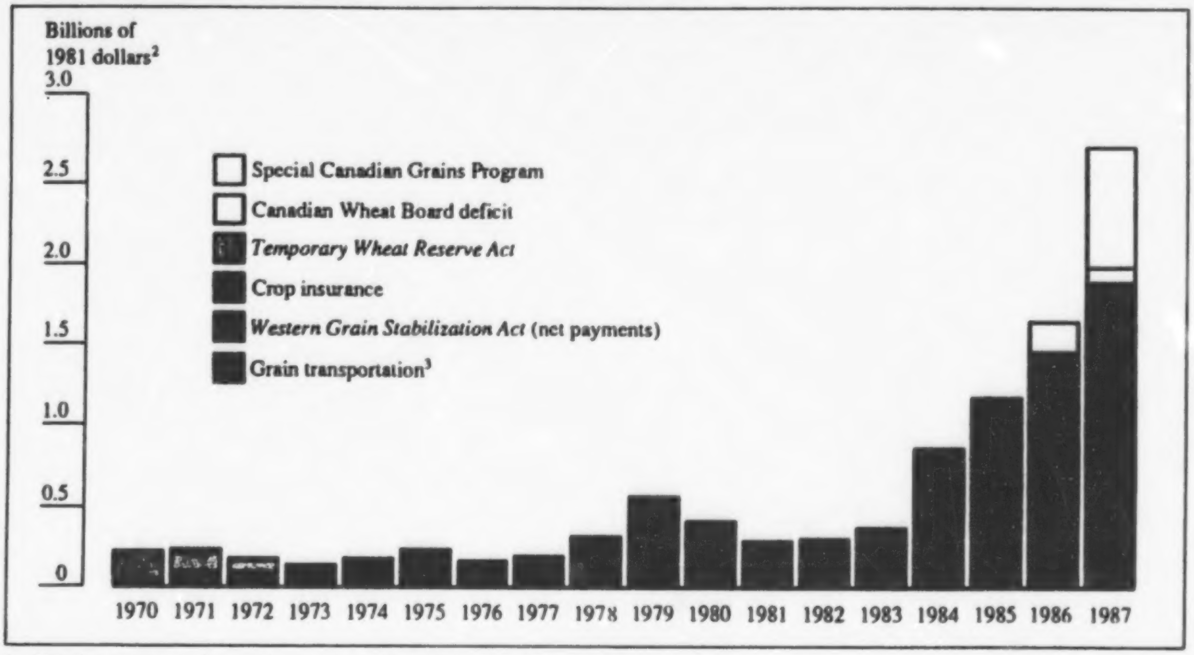
The price at which the insured yield is valued is fixed annually, either before the seeding period or in its early stages. As a result, any indemnity paid out will not reflect subsequent changes in product prices. This has discouraged some farmers from taking out insurance. Insurers and farmers are currently considering the feasibility of contracts based on market prices.

In the Prairies, crop insurance is funded by premiums paid by the producers and matched by the federal government. Each of the three provinces administers the program in its territory and assumes the administrative costs. Farmers' net receipts from insurance have increased considerably in recent years (Table 7-2).

Crop insurance stabilizes income by reducing fluctuations in gross receipts. For example, in 1985 it raised net farm income in the Prairie provinces to a level that exceeded, by over one-third, the level it would have reached in the absence of the program. Because of the drought, insurance payments for 1988 are expected to be high, but not as high as they would have been if fears of reduced output had driven grain prices up earlier in the year.

Chart 7-1

Selected Federal Transfers to the Prairie Grain Economy, 1970-87[1]



[1] Negative amounts under crop insurance and *Western Grain Stabilization Act* are not shown.

[2] Deflated by the farm-input price index, except for the data on payments under the *Western Grain Transportation Act*, which are deflated by the rail-transportation component of the consumer price index.

[3] Includes subsidies for branch lines during the period 1970-83 and payments under the *Western Grain Transportation Act* during the period 1984-87, as well as transitional payments made to railways in 1982 and 1983 and special assistance to reduce shippers' rates for grain freight in 1987.

SOURCE Based on data from Transport Canada, the National Transportation Agency of Canada, the Canadian Wheat Board, and Statistics Canada.

Table 7-2

Farmers' Net Receipts[1] **from Crop Insurance in the Prairie Provinces, 1978-87**

	Manitoba	Saskat-chewan	Alberta	Total
		(Millions of dollars)		
1978	-2	-6	4	-4
1979	3	69	4	76
1980	46	94	7	147
1981	6	39	-4	41
1982	4	26	50	80
1983	12	49	42	103
1984	16	122	134	272
1985	4	210	179	393
1986	14	196	65	275
1987	17	41	54	112

[1] Total payments received by farmers, less their contributions.

SOURCE Statistics Canada, *Agriculture Economic Statistics*, Cat. 21-603.

Crop insurance may contribute to increased output, since it reduces production risks and encourages farmers to use larger quantities of inputs – machinery, fertilizers, and pesticides. It can also be expected to encourage diversification into new specialty crops (considered to be riskier than wheat, barley, or canola) by protecting farmers who try new field-crop combinations. In any event, the substantial public share of insurance costs reinforces the crop orientation of Prairie agriculture, because it excludes forage and pasture and does not provide a parallel, government-funded program to livestock producers.

Agricultural Credit

As farming becomes more capital-intensive, farmers need access to ever greater supplies of funds in order to maintain efficient operations. Since there is little outside equity financing in Prairie farming, both grain and livestock farmers must generally rely on credit.

Both the federal government and the provinces are active in lending to farmers. Following the Depression in the 1930s, commercial lenders were reluctant to make long-term loans to Prairie farmers. In addition, until the late 1960s the chartered banks could not extend long-term mortgage loans. So, since farming was considered a socially desirable form of business activity, the federal Farm Credit Corporation and similar agencies at the provincial level stepped in. Helping new farmers to get started was one of their main objectives. As a result, public agencies were, until 1978, by far the most important source of long-term funds to farmers both in the Prairies and elsewhere in Canada (Table 7-3).

Low interest rates and the widely held expectation of a continued strong market for grains led to a surge in the demand for credit during the second half of the 1970s. Farm organizations criticized the Corporation for what they considered the conservatism of its lending policies, leading governments to make a series of important changes.

In 1975, the *Farm Credit Act* was revised to increase loan limits and to allow the FCC to lend up to 100 per cent of the market value of the security or collateral put up by the farmers. In 1982, the Corporation was allowed to supplement its traditional government sources of capital with borrowings in the capital market. Between 1972 and 1983, FCC loan limits were raised five times to keep up with the inflation in farm-asset values. These changes took effect at the same time as the chartered banks were entering the long-term farm-mortgage market. As commercial lenders became more active in the farm sector, the FCC gradually shifted from being the principal lender to being a residual lender, specializing in higher-risk loans.

Land prices rose rapidly until the early 1980s, increasing the speculative demand for land and raising the value of the assets that farmers could put up as collateral for further land purchases. Many observers – including, most recently, the House of Commons Standing Committee on Agriculture – have concluded that rising land values, rather than expected

Table 7-3

Long-Term Farm Credit in Canada, by Type of Lender, 1970-87

	Federal government[1]	Provincial governments	Banks and credit unions	Private individuals	Others[2]	Total long-term debt outstanding
			(Per cent)			(Millions of dollars)
1970	56.8	19.6	--	12.4	11.2	2,031.9
1971	57.3	19.2	--	12.9	10.6	2,062.9
1972	57.8	19.0	--	13.3	10.0	2,127.9
1973	60.4	17.4	--	14.3	8.0	2,391.4
1974	60.7	18.7	--	14.2	6.4	2,773.4
1975	60.7	17.7	--	16.1	5.5	3,180.9
1976	59.7	16.3	4.6	15.0	4.4	3,813.6
1977	58.2	15.6	9.0	14.3	2.8	4,435.5
1978	51.4	12.3	20.2	13.9	2.2	5,559.7
1979	45.1	12.1	26.6	13.5	2.6	7,042.1
1980	44.0	13.1	26.9	13.4	2.6	7,888.8
1981	42.8	14.4	26.8	13.6	2.5	8,950.9
1982	40.2	13.6	29.9	13.1	3.2	9,732.8
1983	41.7	13.7	29.7	12.2	2.7	10,955.4
1984	41.1	14.0	30.6	11.5	2.8	11,260.7
1985	40.3	14.4	30.8	11.2	3.3	11,399.2
1986	40.0	15.1	30.9	10.1	3.9	11,415.5
1987	40.0	15.1	30.9	10.1	3.9	11,073.0

1 That is, the Farm Credit Corporation.

2 Includes insurance, trust and loan companies, Alberta Treasury Branches, Alberta electrical cooperatives, and payments under the *Veterans' Land Act*.

SOURCE Canada, House of Commons, *The $22 Billion Problem: Options for the Financial Restructuring of Farm Debt*, Report of the Standing Committee on Agriculture, July 1988; and estimates by the Economic Council of Canada.

income flows, drove lending policies in the late 1970s: "Most lenders lent on the basis of debt-to-asset ratios and using market value net worth statements as opposed to cost-based balance sheets."[1]

Prairie farmers, particularly in Alberta and Saskatchewan, took advantage of generous credit terms in the late 1970s and early 1980s (Chart 7-2). An abrupt rise in interest rates, followed by a sudden drop in grain prices, led to the disastrous changes in farm finances that were analysed in Chapter 6.

As more and more Prairie farmers found themselves unable to service the loans that they had taken out earlier, the federal government used the Farm Credit Corporation to provide a series of relief measures. In 1981, the Special Farm Financial Assistance Program was introduced, providing two-year interest rebates of 4 and 5 per cent, accompanied by debt-consolidation measures. This resulted in public expenditures of $345 million for debt consolidation and left the FCC with a number of high-risk loans, which had been transferred to it from the private sector. In 1985, there was a further interest-rate reduction to 12.75 per cent on loans made in 1981-82 at between 14 and 16.75 per cent. In 1986, "commodity loans" were introduced, reducing interest rates and linking them to commodity prices, with the FCC carrying part of the cost.

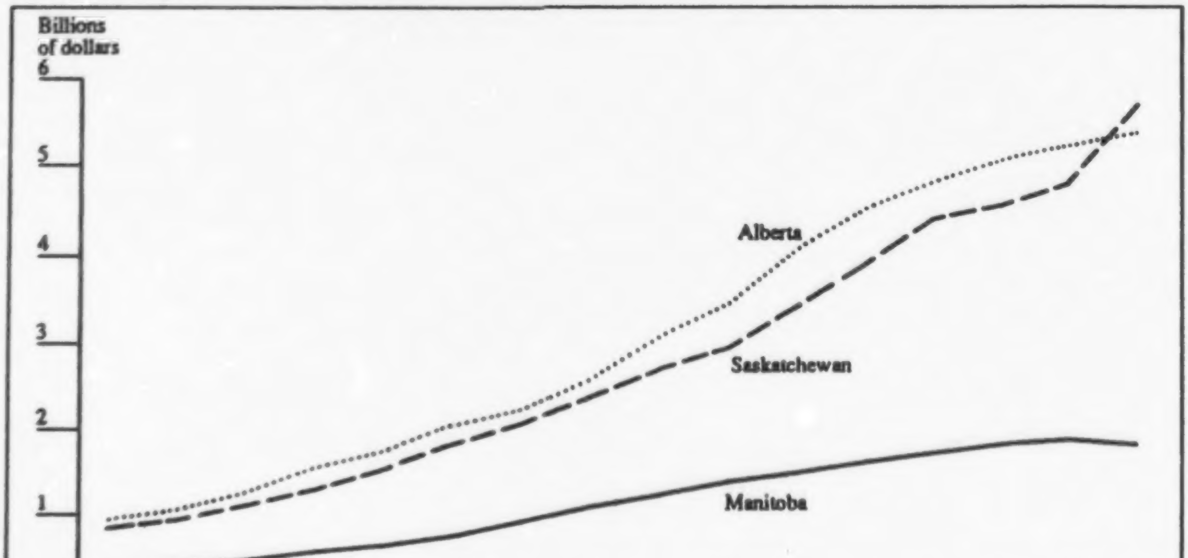
In its role as a residual high-cost lender, the Corporation ended 1987/88 with an operational loss of $512 million and a cumulative deficit of $855 million. In July 1988, the Minister of Agriculture announced a $400-million cash injection, with promises of further injections of funds over the next three years, to assist the FCC in its recovery.

To help farmers who were unable to meet their financial obligations, the federal government also set up Farm Debt Review Boards in every province. The boards provide an impartial, third-party review of a farmer's debt position. In many cases, they mediate between debtor and creditor. Most commentators consider that the boards play a very useful role in helping potentially profitable farmers to consolidate their debts, while assisting others to come to terms with the realization that they must give up farming.

Thus, when it realized the seriousness of the debt problem, the federal government introduced a series of relief measures that subsequently became one of the main causes

Chart 7-2

The Level of Agricultural Debt,[1] Prairie Provinces, 1971-86



1 Total farm debt outstanding at year's end.

SOURCE Statistics Canada, *Agriculture Economic Statistics*, Cat. 21-603.

of the FCC's current deficit situation. But its lending policies in the late 1970s had allowed farmers who could not borrow from commercial institutions to take on debt in excess of their capacity to repay. This public support for farm borrowers reinforced the rise in land values and contributed to the volatility of the Prairie farm sector.

Transportation Subsidies

The rail subsidies currently provided under the *Western Grain Transportation Act* are a successor to the famous "Crow rate" for rail freight in western Canada. The Crow rate was an integral part of the settlement of western Canada and of the industrialization of the East, as it facilitated the movement of grain from western farms to the Great Lakes and to the Atlantic Ocean, and it provided for the movement of settlers' effects and manufactured goods into western Canada at fixed rates. Fixed rates were an element of Canada's implicit development strategy. They were retained for grain transportation after they had been eliminated for other freight. This led the railways to contend that the rates were too low to enable them to maintain an adequate and efficient transportation system. The federal government attempted to compensate them indirectly – for example, by granting them branch-line subsidies under the *Railway Act* and by buying hopper cars. Grain farmers thus benefited both from a transfer from the railways and from government expenditure on transportation.

In the late 1970s and early 1980s, there was extensive debate as to the best way to replace the fixed rates. The federal government had to decide whether subsidization of grain transportation should continue and who should receive the subsidy. In 1983, the *Western Grain Transportation Act* was enacted to apply to defined movements of grain from Prairie shipping points to Thunder Bay, Armstrong, Churchill, and ports in British Columbia. Government payments to the railways under the legislation consist of a fixed annual amount (the "Crow benefit"), supplemented by additional payments if the year-to-year cost of moving a tonne of grain exceeds a prescribed percentage or if the freight rate paid by producers exceeds a specified proportion of the average selling price of the major grains. Railway freight rates are adjusted annually, at the beginning of each crop year, by the National Transportation Agency through the application of indices to the actual costs, recalculated at four-year intervals, that are incurred by the railways for the movement of grain. As a result, the producers' share of the total freight rate will rise in response to higher grain volumes and inflationary cost increases.

Prairie producers cannot shift the costs of transporting their products to their foreign customers, because they would most likely lose grain sales. Consequently, they would have to assume the shipping costs themselves if no transportation subsidies were available. The *Western Grain Transportation Act* therefore increases the returns to the production of grains and oilseeds, and it effectively raises the prices of those products in the Prairie region to a higher level than would prevail in the absence of freight subsidies. While this benefits crop producers, it raises costs for livestock producers who feed local grains and oilseeds to their cattle and hogs. It also raises the costs of grain for further processing in the Prairies. Thus it is not surprising that livestock producers and grain processors in the Prairies wanted the freight subsidies phased out or paid to the producers, whereas competing livestock producers in other parts of Canada preferred the method of payment that was adopted under the *Western Grain Transportation Act*.

In the spring of 1988, the premiers of Manitoba, Saskatchewan, Alberta, and British Columbia acknowledged the differences in the agricultural economies of their respective provinces and agreed that each provincial government should be able to determine the method of paying the transportation subsidy within its own jurisdiction. They also requested that the federal government work with the governments of the two westernmost provinces to pay the "Crow benefit" directly to the grain producers, on an experimental basis. This request has not yet been implemented, but it shows a willingness to modify formerly entrenched positions on the part of some of the major actors.

Research for the Council suggests that the freight subsidy has raised the price of grain significantly since 1970 and has made a notable contribution to the net farm income of crop farmers since 1980. The *Western Grain Transportation Act* favours rail over other modes of transportation in carrying Prairie grain and perpetuates a regulatory structure in western transportation that many view as a disincentive to entrepreneurial activity.

Payments under the Act are regarded as export subsidies by many of Canada's trade partners. This is principally because, unlike most other transportation subsidies, they support the shipping to export points of a particular set of commodities. There is no evidence that the Act has had an impact on the world price of grain, although over the long run it is likely to influence the volume of Canadian grain exports. The measure is highly visible at the international level, however. It is significant that the Canada-U.S. Free-Trade Agreement provides for the elimination of transportation subsidies under the *Western Grain Transportation Act* for commodities (mainly canola products) shipped to the United States via West Coast ports. The federal government can therefore be expected to come under pressure to modify the Act in the current multilateral trade negotiations.

Table 7-4

Net Payments[1] to Farmers in the Prairie Provinces under the *Western Grain Stabilization Act*, 1978-87

	Manitoba	Saskatchewan	Alberta	Total
		(Millions of dollars)		
1978	14	51	21	86
1979	35	126	50	211
1980	–9	–24	–15	–48
1981	–10	–33	–14	–57
1982	–9	–31	–15	–55
1983	–11	–37	–17	–65
1984	27	100	46	173
1985	80	271	129	480
1986	146	463	218	827
1987	255	743	360	1,358

[1] Total payments received by farmers, less their contributions.

SOURCE Statistics Canada, *Agriculture Economic Statistics*, Cat. 21-603.

Income Stabilization

The *Western Grain Stabilization Act*, introduced in 1976, set up a program under which Prairie grain and oilseed producers, as well as the federal government, contribute jointly to a fund to stabilize producers' incomes. The program is intended to ensure that the participants' cash flow from sales in any one year will not fall below the average of the previous five years. Stabilization payments are triggered when either the total net cash flow (the difference between farm cash receipts and the expenses that arise from the production of eligible crops) or the net cash flow per tonne of eligible crops in the Canadian Wheat Board area falls below its previous five-year average.

Until the *Western Grain Stabilization Act* was amended in August 1988, it covered seven crops: wheat (including durum), oats, barley, rye, flax, canola, and mustard seed. The amendment added the 10 most common specialty crops. Since support under the program is based on the difference between the costs of production and the receipts from the sale of crops, grain fed to livestock or stored on a producer's farm is not covered. Forage and pasture are also excluded.

The contributions to the stabilization fund, called levies, are equal to a percentage of total eligible sales, with an annual ceiling of $60,000, which is also the ceiling on the program's payout to a beneficiary in any one year. Until the August 1988 amendment, producers' levies were equal to 1 per cent of sales, and the federal government's contribution was 3 per cent. The fund built up a surplus in the early 1980s, when payouts were lower than contributions (Table 7-4); but in the second half of the decade, the fund went into deficit, and the federal government wrote off $750 million of its debt in December 1987.

The 1988 amendment raised producers' levies to 4 per cent of sales and the federal government's contribution to 6 per cent. It also revised the levy-rate adjustment mechanism. Levy rates will be 4 per cent of sales when there is a deficit in the stabilization account, and 3 per cent when the account is in surplus. The rate will fall to 2 per cent if the surplus in the account exceeds 50 per cent of the average net grain proceeds for the preceding five years. There is some further scope in the Act for flexibility in the program's application. The ceiling on eligible grain sales, which has been set at $60,000 since 1983, can be varied, and some critics argue that this aspect of the program has been underutilized.

The program plays an important role in stabilizing net cash income in the Prairies. Indeed, it has been the major stabilizing factor during the period 1986-88. It does not necessarily stabilize an individual farmer's income, however, since a producer who has a poor harvest while the region is enjoying a good crop is unlikely to benefit from the program. Larger farms receive more assistance than smaller ones, up to the $60,000 ceiling.

Participation in the program is voluntary. Until recently, farmers who decided not to join and then changed their minds received a lower level of benefits during a transitional period. This penalty was eliminated in the 1988 amendment, and the federal government is encouraging wider participation by farmers. Voluntary participation in the major stabilization program leads to problems, however. Farmers who judged the program unsound or too expensive when it was introduced and who decided not to participate were naturally resentful when a portion of the stabilization fund's deficit was written off. On the other hand, such non-participants often expect *ad hoc* relief programs in times of particular hardship.

Until the Act was amended, it discouraged diversification into specialty crops; indeed, it encouraged the production of traditional crops when the market was weak, because the payout was based on the sale of those crops rather than on total sales. That distortionary effect has been corrected by the inclusion of the 10 specialty crops. But the program continues to promote the production of crops, giving rise to cash sales rather than the use of land for pasture or forage or the feeding of grain to livestock. The substantial subsidy element in the program works to remove more of the troughs than the peaks in the price cycle. This is likely to increase production and to strengthen land prices, since farmers will be willing to pay a higher price for land when commodity prices are strong if they know that their incomes will be supported when prices fall.

Special Canadian Grains Program

The drop in grain prices in 1986 was so severe that the stabilization program was not considered sufficient to support farm incomes. So, in December 1986, the government announced the Special Canadian Grains Program (SCGP), which provided a $1-billion cash payment to crop producers to cushion the impact of the subsidy war between the United States and the European Community. Approximately $815 million went to Prairie farmers in 1987 (see Table 7-1).

Payments under the program were calculated on the basis of the acreage that each farmer had seeded to the designated crops in 1986, of the regional crop yield, and of the relative price decline for each commodity that was attributable to the trade war (in particular to the estimated impact of the lowering of the U.S. loan rates). The maximum allowable payment to any individual was $25,000. The crops covered under the 1986/87 program were wheat (including durum), barley, oats, rye, mixed grains, corn, soybeans, canola, flax, and sunflower seeds.

In December 1987, the federal government announced a one-year extension of the SCGP. Further payments totalling $1.1 billion were to be made in 1988, with the first payment to come before the spring seeding. This time, the plan was based on the acreage that the farmer had seeded to the designated crops in 1987, and the list was expanded to include nine specialty crops, as well as alfalfa for processing, honey, and summer fallow.

Since the first series of payments under SCGP applied to a limited number of traditional crops, the program is believed to have discouraged farmers from moving into specialty crops (such as field peas and lentils), despite the weak markets for grains and oilseeds. The expansion in the range of crops eligible under the SCGP in 1987/88 and the inclusion of summer fallow eliminate that problem.

In the short run, deficiency payments, such as those under the SCGP, can be expected to slow down the decline in land values. But in the long run, if farmers believe that deficiency payments will be introduced every time the market weakens, they are likely to bid up still further the price that they would be willing to pay for land when times are good. Thus while the deficiency payments may stabilize land values when markets are soft, they can also be expected to add to any upswing in prices during strong markets by reducing the downside risk.

The two payments under the SCGP represent a departure from Canada's traditional forms of support to Prairie producers, which are broadly based on insurance principles. In contrast with those more traditional payments, SCGP payments are guaranteed prior to seeding and are unrelated to farmers' losses (or gains) from the production of the designated crops. They are also, as noted earlier, one of the principal causes of the recent jump in Canada's intervention in agricultural production, as measured by the producer-subsidy equivalent.

Canadian Wheat Board

The Canadian Wheat Board (CWB) is probably the most important of the regulatory and marketing agencies that have been set up to respond to the needs of Prairie agriculture. The special conditions of grain production on the Prairies – the short growing season, which brings all crops to harvest at about the same time; the large volume of grains to be stored and transported throughout the year; and the long distances between producers and their final customers – all increase the importance of the intermediaries between producers and customers. Some of the problems become evident when we consider, first, that the transportation system cannot handle all of the grain at the time of harvest; second, that in most years both the more expensive eastern route through Thunder Bay and the St. Lawrence Seaway and the cheaper western route through Prince Rupert and Vancouver have to be used; and, third that the prices of the different grains fluctuate from day to day.

In the early part of this century, the railways and the grain traders assumed responsibility for transporting and marketing Prairie grains. Farmers, however, were dissatisfied with the resulting situation, in which one farmer could be played off against another, some grading practices were unfair, and large profits were made at their expense. So, in 1935, the Canadian Wheat Board – a central marketing agency – was set up to market as much grain as possible at the best prices and to ensure that each producer got his fair share of the available market.

The Board handles all the export sales of wheat, barley, and oats produced in the three Prairie provinces and in the

Peace River area of British Columbia, as well as the domestic sales of Prairie wheat for human consumption. It also limits the imports of those three commodities. The Board pools receipts from its sales of each of the three grains in six different pool accounts and equalizes the returns to producers, after taking account of the grades of product that each farmer has supplied and of his geographical location with respect to terminal elevators. The timing of the farmer's delivery, the route by which his product is exported, and the actual price paid by the purchasing country or trader do not directly affect the price the farmer receives. The farmer thus transfers the burden of marketing and financing, as well as some of the storage and transportation problems, to the Board and to the transportation and storage agencies that the Board regulates jointly with the Canadian Grain Commission (which is concerned with quality grading) and the Grain Transportation Agency.

The Canadian Wheat Board sets the initial prices for the three grains before the beginning of the crop year. If the end-of-year pooled revenue from its sales of each grain exceeds the amount necessary to cover payments to producers based on the initial prices, the balance is distributed as a final payment. But if end-of-year revenues are insufficient to cover the initial payments to producers as a result of lower-than-expected prices, the deficit is covered by the federal government. Thus it is clear that once initial prices have been announced by the CWB, they become guaranteed prices. Up until the 1985/86 crop year, deficits in the pool accounts were rare. But in that year, the combined deficits in all pools totalled $201.3 million; in 1986/87, the deficit in the barley accounts was $110.5 million.

The Board also assists grain farmers by providing them with cash advances, which are, in effect, interest-free loans. Advances of up to $30,000 are available on grain stored on the farm. The loan is available immediately after the harvest and is repaid when the farmer sells the grain to the CWB.

The Canadian Wheat Board's main role, however, is to sell Canadian grains overseas. As noted in Chapter 2, international grain markets have become increasingly concentrated despite the increase in the number of grain-importing countries. State or centralized trading and marketing agencies account for a very large proportion of world trade, particularly on the purchasing side. A small number of multinational enterprises share the remaining market and supply shipping services to state traders. This situation strengthens the case for maintaining a central selling agency such as the CWB.

Yet some Canadian grain producers and traders believe that the Board's monopoly powers and mode of operation discourage entrepreneurial initiative. They point, first, to the difficulty of developing a domestic futures market, since transborder flows of grain are controlled by the CWB and since its price, which plays the dominant role in the market, is only determined when final payments are made to the producers, more than a year after they have harvested their crops. In the opinion of these critics, the absence of a reliable mechanism for price discovery and price hedging for feed grains not sold through the CWB works against the interests of producers and of their domestic customers – the Canadian livestock producers.

Second, the Board's responsibility for the export of all wheat, barley, and oats produced in the Prairies may make it difficult for Canadian producers or traders to develop niches in foreign markets. At present, the volume of sales into such niches (for example, the U.S. racehorse market for cleaned oats) is very small, compared with the volume of bulk grain shipped overseas, but entrepreneurial traders claim that there are many untapped market niches for Canadian grains.

Until 1974, the CWB was responsible for interprovincial trade in wheat, oats, and barley. Since then, however, the domestic grain market has become more open, and producers and buyers have the option of going through the Board or through the open market for domestic sales of feed grains. In addition, the recent termination of the two-price wheat system has reduced the rigidities in the domestic wheat market. Many producers – wheat farmers, in particular – believe that any further dilution of the Board's authority would seriously weaken its effectiveness. While a few enterprising individuals might be able to obtain higher prices, the Board's loss of control over the total product available for export would, they believe, prevent it from maximizing the returns to producers.

Provincial Farm-Support Programs

The government of the three Prairie provinces are all active in the farm sector. Table 7-5 shows their principal program expenditures on agriculture in 1987/88. These figures do not include debt write-offs or provisions for bad loans.

Credit assistance is one of the major expenditures by all three governments. All three also undertake spending on farm and rural infrastructure, and they stabilize farm income from livestock production. Alberta and Saskatchewan assist farmers on the input side, with rebates on fuel and fertilizer. In 1987, the former spent $125.8 million on

Table 7-5

Provincial Farm Assistance Programs, Prairie Provinces, 1987/88[1]

	Manitoba	Saskat-chewan	Alberta	Total
		(Millions of dollars)		
Farm fuel and oil[2]	--	7.9	125.8	133.7
Farm loans	17.2	72.2	16.1	105.5
Farm and rural development	28.2	37.1	17.5	82.8
Livestock insurance	11.2	24.1	--	35.3
Other	15.9	--	71.5[3]	87.4
Total	72.5	141.3	230.9	444.7

1 The data for Manitoba and Saskatchewan are on a fiscal-year basis; those for Alberta are based on the 1987 calendar year.

2 Not a direct payment to producers.

3 The Alberta Crow Benefit Offset Program.

SOURCE Provincial Departments of Agriculture.

a fuel-cost-reduction program designed to reduce the burden of rising input costs on farmers.

Saskatchewan has been particularly active in the credit field. It provides interest rebates to reduce the cost of farmland, as well as low-interest operating loans and special loans for livestock and irrigation under the provincial Agricultural Credit Corporation. The provincial government has set up a number of different livestock programs directed at particular types of operations – feeder cattle, cow/calves, hogs, and so on.

Since agriculture is a shared federal/provincial responsibility, provincial programs often complement the federal ones or deal with areas of exclusive provincial jurisdiction, such as irrigation. But some provincial programs have been set up to compensate for the effects of federal programs. An outstanding example is Alberta's Crow Benefit Offset Program, which commenced in July 1987. It is designed to help neutralize the market distortions in domestic feed-grain pricing that result from the payment of the federal "Crow benefit" to the railways. In 1987, Alberta spent $71.5 million on this program and on the Feed Grain Market Adjustment Program that preceded it.

Macroeconomic and Structural Policies

As Prairie farming has become a specialized, capital-intensive type of business activity, monetary and fiscal policies have come to play a more important role in the farmer's life than they did in earlier times, when few farmers paid income tax and many could fall back on farm-produced supplies in times of hardship.

The burden of interest payments is certainly not a new subject in the Prairies, but the sudden swing from very low to very high real interest rates between the late 1970s and the early 1980s was an unexpected shock to borrowers. Unquestionably, that sudden change of direction was a major cause of the current financial vulnerability of Prairie farmers. This experience has led several farm groups to ask the federal government to keep rates at a stable level in order to protect the interests of agricultural producers. But the reality is that given the close economic links between countries, Canada has very little flexibility in terms of its interest-rate policy. Inasmuch as they are aware of the effects of interest-rate changes on the agricultural sector, governments can, however, adopt policies to encourage asset diversification and to alleviate the consequences of the inevitable fluctuations of interest rates on farmers.

On the tax side, several measures (including capital-cost allowances, capital-gain exemptions, and the deduction of interest payments on land mortgages) encourage farmers to increase their commitments to the family farm. The $500,000-capital-gain deduction, for example, is often presented as a substitute for farmers' pensions; yet, along with other fiscal measures, it encourages farmers to reinvest their profits in the farm rather than take out registered retirement savings plans or otherwise diversify their assets. Tax provisions that encourage the intergenerational transfers of farms tend to work in the same way. While these programs were undoubtedly designed in the best interests of farmers, the current financial vulnerability of the latter and the risk of overindebtedness suggest that there may be a need to re-examine some of them.

When we turn to adjustment policies, we note that the major national programs are either not available to farmers or not used by them. The most important of these programs are unemployment insurance and labour-market training. Federal expenditures on these two programs have amounted to approximately $4.5 billion per year over the past five years. Self-employed farmers, however, do not receive unemployment insurance and make virtually no use of industrial retraining programs.

Canadian Rural Transition Program

The Canadian Rural Transition Program (CRTP) is one program that is tailored to farmers' needs. It has been in existence since September 1986 and is available to farmers across Canada who can demonstrate that they are in financial difficulty. Nearly 1,900 applications have been approved so far, of which just over half have come from the Prairie provinces. (The farmers of Alberta have used the program more than those of Saskatchewan or Manitoba.) Expenditures on the program amounted to about $10 million in the first 18 months of its existence; a similar sum was allocated for 1987/88.

The basic elements of the program are Transition Grants and Supplementary Transition Assistance, which pay a living cost of $2,000 for the first four weeks of transition, as well as supplementary benefits for dependants of up to $3,696. The CRTP also covers the costs of training for up to two years, the reimbursement of wages up to $5,720, self-employment grants of up to $9,360, and counselling services. The average approved claim was less than $4,000 in 1986/87 and about $5,350 in 1987/88.

The CRTP is the only occupational-adjustment program that attempts to meet the needs of Prairie farmers. Most of the other labour-market adjustment programs are tied to former work experience or to industrial training. The Canadian Jobs Strategy is an exception, but few farmers have availed themselves of it, either because it is not well enough known or because it is ill adapted to their needs. Our research shows that adjustment out of farming has been relatively slower in the Prairie region than in comparable U.S. locations. That is not surprising, in view of the difficulties that farmers face in making the transition from agriculture to other sectors and in view of the incentives that farm-income-support programs provide to those who want to hold out, hoping for better years.

Policy Assessment

Public expenditures on Prairie agriculture took a quantum jump in the mid-1980s. In the 1987/88 crop year, payments under the *Western Grain Stabilization Act* (WGSA) and the Special Canadian Grains Program provided $1.4 billion and $0.8 billion, respectively – a total of $2.2 billion – in direct income support, or roughly $17,000 in additional income per farmer. Without this assistance, half the farmers in the Prairie region would have been in some financial difficulty, since they would not have had enough cash income to cover basic family living expenses. Thanks to these payments, the number of farmers in financial difficulty was reduced from 50 to 28 per cent across the Prairies (Table 7-6). In the absence of these two programs, almost one-third of Prairie farmers would have been in a nonviable financial situation, with no cash income for living expenses. Payouts under the WGSA and the SCGP reduced that proportion to one-tenth.

Table 7-6

Distribution of Farm Incomes in the Prairie Provinces, With and Without WGSA and SCGP Payments,[1] by Degree of Financial Stress, 1987

	Manitoba	Saskat-chewan	Alberta	All three provinces
	(Per cent)			
Without WGSA and SCGP:				
Stable	43	46	59	50
Vulnerable	12	11	10	11
Deteriorating	10	11	9	10
Nonviable	35	32	22	29
Total	100	100	100	100
With WGSA and SCGP:				
Stable	67	72	74	72
Vulnerable	12	11	9	10
Deteriorating	8	8	7	8
Nonviable	13	9	10	10
Total	100	100	100	100

[1] Payments under the *Western Grain Stabilization Act* and the Special Canadian Grains Program.

SOURCE Estimates of the Economic Council of Canada, based on data from Statistics Canada.

Income support enabled farmers to continue producing, and the Canadian Wheat Board to continue selling, Canadian wheat and coarse grains at competitive prices. Canada was therefore able to maintain its share of world markets.

Despite this extraordinary support, the Prairie grain economy is in little better shape than it was three years ago. The prolonged drought in the spring and summer of 1988 partly explains the continued hardship. Recall, also, that the 1986 downturn was unusually severe and was compounded by an unexpected upswing in interest rates. Our analysis suggests, however, that inappropriate policies also contributed to the region's problems.

First, policy makers underestimated the seriousness of the debt buildup in Prairie farming. At a time when commercial lending institutions were competing for farm loans, the Farm Credit Corporation and its sister agencies at the provincial level were encouraged to take on loans that were unattractive to the private sector. There is reason to believe that such a policy aggravated the run-up in land values, which is one of the principal causes of the current cash-flow problem.

Second, a combination of program characteristics signaled to Prairie farmers that they should persevere in producing traditional export grains rather than diversify their crops, set up a livestock operation, or quit farming. The programs that we have analysed are all biased in favour of crop production and, until very recently, in favour of the traditional grains and oilseeds. At the same time, the support levels under the WGSA and the SCGP have been unpredictable. Farmers could not count on $750 million of the deficit in the Western Grain Stabilization Fund being written off or on the SCGP being extended. The SCGP's payments in the first year were provided to all, regardless of need, as were those made in the second year, although the crop coverage was changed. This *ad hoc* policy formulation, while understandable in political terms, reduces farmers' incentives to make long-term management decisions and to assume their consequences.

Third, the provision of public support on a commodity-by-commodity basis strengthens commodity lobby groups and often weakens the umbrella farm organizations. This leads to still further pressure for specific interventions and to less support for broadly based, product-neutral government assistance – for agricultural research and development, for example.

Fourth, there is a proliferation of agricultural programs and program bureaucracies at the federal and provincial levels. This results in inconsistencies between federal programs with respect to eligibility criteria.

Fifth, although the Council has not undertaken new analysis in this area, recent studies strongly suggest that certain provincial support programs have been adopted to promote employment and to increase the level of economic activity in some provinces at the expense of others. The high level of federal support for Prairie agriculture has also created resentment among farm groups in other parts of the country, particularly in Quebec. Meanwhile, Alberta has set up the Crow Benefit Offset Program explicitly to counter the effects of the *Western Grain Transportation Act*.

Finally, the current level of support to Prairie agriculture is clearly unsustainable. Expenditures must be reduced to a manageable level, and policy objectives must be re-examined.

Clearly, the experience of the past three years has revealed serious weaknesses in existing federal programs aimed at the Prairie grain economy. At the same time, the signing of the Canada-U.S. Free-Trade Agreement and the on-going multilateral negotiations in the GATT framework provide Canadians with an opportunity to re-examine the nature of their support for Prairie farmers.

8 "Decoupled" Farm-Income Support

We observed earlier that Prairie farmers are plagued by two problems: low farm incomes, and income instability. Not all farmers are affected equally. Low farm incomes are found primarily on small marginal farms, while unstable farm incomes tend to affect the larger commercial farms. Farm-assistance programs have been designed, with varying success, to address both problems. Most of the programs are tied to the production of specific commodities, so that the more of a commodity that a farmer produces, the more the government will pay. We have seen that this mode of support has weaknesses on both the international and the domestic front.

In the international arena, commodity-price supports and input subsidies to farmers have resulted in the production of burdensome surpluses. This type of government funding raises farm prices, obscures real production costs, encourages excess production, changes the competitive position of exporting countries, causes trade distortions that can lead to an ever-increasing misallocation of resources, and gives rise to serious friction in international trade.

On the domestic front, commodity-based supports also distort market signals. Existing disincentives to livestock production in the Prairie provinces are an example. They also open the door to the adoption of *ad hoc* programs in response to lobbying by farm community groups, leading to a patchwork quilt of parallel programs that emit conflicting signals. Moreover, support based on the level of output or on the number of acres seeded cannot be targeted at either the neediest or the most efficient farmers. Rather, those with larger operations receive more public money than those with smaller operations.

An alternative approach to supporting the farm sector is to use income, rather than output or acreage, as the basis for support. Under this approach, there is no direct link between farm support and the volume of production of particular farm commodities. Such assistance has come to be called "decoupled" support. While adopting such a form of support will not solve the problem of low farm incomes, it has the advantage of being commodity-neutral; consequently, it will not encourage the excess production of specific farm commodities, but it will increase the stability of farm incomes.

The decoupling of farm support, which is under consideration in most OECD countries, offers a possible response to both the international and the domestic problems mentioned above. Before it can be adopted to replace existing farm-support programs, however, a number of issues must be addressed. Researchers and farm experts are currently working on these issues in the United States and Europe, as well as in this country.

One set of issues concerns attitudes and traditions, both within the farming community and beyond it. Implicit in the traditional form of support was the notion that farmers deserve a fair price for the food that they produce. Price supports are often presented as making up the difference between such a fair price and an abnormally low market price. The Special Canadian Grains Program is a good example: it was intended to compensate Canadian farmers for some of the losses that they endured as a result of the price war between the United States and the European Community. Income support, on the other hand, is not part of the farming tradition.

But price support encourages farmers to produce more, thus reinforcing the excess productive capacity in the industrialized countries. This suggests that if governments wish to support farmers, income-related support warrants further investigation.

A second set of issues pertains to the targeting of income support. Some analysts suggest that any form of public support should be directed at those most in need. Our research shows that there are many marginal farmers in the Prairies whose incomes from farming are extremely low. Aiming program support at this group would certainly raise their standard of living. But it would also amount to rewarding the least productive group of farmers; moreover, it would constitute a type of guaranteed minimum income for one particular group in Canadian society.

At the other extreme, public support could be directed towards the farmers who appear to make the most efficient use of their resources, as measured by their net cash revenues. Such a policy choice would reinforce efficiency and hasten the rationalization of the industry, but it would also overlook the needs of a large number of farm families.

It is important to understand that decoupling farm support does not entail adopting either of those extreme positions. Income-related support can be designed to respond to a number of different objectives. In particular, as we shall see below, a decoupled program can alleviate the two major problems identified earlier – the level of farm incomes, and their instability. Decoupling, however, does entail support on an individual-farm basis rather than on the basis of the mix of farm acreage and regional performance currently used for support programs.

A third set of issues arises from the administrative requirements of a decoupled program. If support is to be based on the level or volatility of a farm operator's income, it will necessarily require that a "program file" be set up for each operator. The use of income tax files would avoid the need for duplicating paperwork. There would still be a need for closer monitoring of costs and receipts than exists currently, but that does not seem to be an unreasonable price to pay in order to ensure ongoing income support by society.

A final set of issues concerns eligibility. Prairie grain farmers are accustomed to a simple criterion of eligibility for a number of programs – the holding of a Canadian Wheat Board quota book. An income-support program for farmers, unrelated to the sale of any particular commodity, would have to establish certain eligibility criteria to allocate that support. Moreover, there would be no reason to exclude farmers in provinces other than the three Prairie provinces from the program. Indeed, there are sound reasons to suggest that a rethinking of the approach to farm support should take account of the needs of the widest possible group of Canadian farmers.

An Approach to Decoupled Farm-Income Support

The Council has developed a set of four examples of commodity-neutral, farm-income-support programs to illustrate the potential advantages of decoupling support to Prairie farmers and to examine some of the constraints. A detailed analysis of the costs and benefits of decoupling will be provided in a forthcoming study. The study will specify threshold and maximum support levels, and outline eligibility criteria, which will be crucial in determining the impact of such a program and its administrative feasibility. Here, we simply outline the main features of decoupling in order to show how such a support system could respond to the needs that we have identified.

The programs address the two fundamental farm problems – low income, and income instability. Each of the programs deals with part of the problems, and together they complement each other in a comprehensive system of support aimed at maintaining a viable farming system, making it more sensitive to market signals, building on its inherent strengths, and facilitating adjustment. The aims of the individual programs are to ensure against variations in farm income, to promote farm enterprise and financial-asset diversification, to encourage those who help themselves, and to protect farmers against extreme hardship. This set of programs would replace the major commodity-oriented programs that exist today.

The four illustrative programs can be summarized as follows:

1 Farm-income insurance: Designed to protect farmers against major farm-income losses, whether they be caused by unfavourable market prices or by adverse weather conditions; government and farmers would share the cost of the program on an equal basis.

2 Income-stabilization fund: Designed to encourage farmers to invest a major part of their income gains from farming operations in a self-administered fund, in order to protect against future income losses and thereby save on farm-income insurance; government would match the farmers' contribution, again on a one-to-one basis.

3 Farm adjustment option: Would enable a farmer to treat the assets accumulated over the years in the income-stabilization fund as a tax-free capital gain when he leaves farming or retires.

4 Family-income disaster assistance: Would be triggered when provincial or regional farm incomes drop to disastrous levels and would help farmers to cover up to half of their essential living expenses.

The suggested programs would be based on insurance principles and would not be designed to provide ongoing support to low-income farmers. Instead, they would be targeted at specific income situations below or above the norm; their coverage would be broad enough, however, to benefit most farmers. At the same time, provision would be made to help needy farmers in periods of widespread economic hardship.

Farm-Income Insurance

Under this program, a farmer would receive cash payments whenever his farm income dropped below its "normal" level – which, in our example, would be the average income of the preceding five years. "Farm income" is defined here as net cash returns – i.e., farm cash receipts minus farm cash expenses (excluding payments on farm loans). The insurance would cover up to two-thirds of the loss in farm income – to a maximum payout of, say, $60,000 per year. Participation in the program would be mandatory, so as to prevent non-participants from gaining an unfair advantage by joining late or leaving early and to eliminate the need for *ad hoc* relief programs for non-participants. Farmers would be free, however, to build up their own insurance fund; as we shall see later, that would enable them to save on insurance premiums.

The insurance premium, or levy, would be based on farm cash receipts and would be paid by the farmer; a matching contribution would be paid by the government. The levy rates would be set at provincial averages and adjusted up or down for the individual farmer, depending on the frequency and size of the payouts he received. The more frequent a farmer's losses, the higher the payouts and the higher his subsequent insurance levy.

Currently, under the *Western Grain Stabilization Act*, the federal government more than matches the farmer's contribution to the insurance fund. Payouts are triggered by low crop prices and are distributed to producers according to the volume of their sales of eligible crops: the greater the volume, the greater the insurance payout (up to a limit of $60,000).

The major difference between the proposed "farm-income insurance program" and a program such as that currently administered under the *Western Grain Stabilization Act* is that cash benefits would not be paid out to all farmers but only to those suffering losses. In addition, the payout would not be based on the losses on the sale of particular commodities but on two-thirds of the losses in net cash farm income of each farmer from all of his agricultural operations. And the funding of this income-insurance program by farmers and government would be based on sound actuarial principles.

Income-Stabilization Fund

Under this program, each farmer would be able to set up his own stabilization fund and thereby reduce his dependence on the income-insurance program. Just as the government would match losses under the income-insurance program, so, too, it would match up to two-thirds of a farmer's income gains from farming operations, provided that he invested them in the fund. The investment would be tax-deductible.

If, for example, a farmer had an income gain (over the average of the preceding five years) of $20,000, the government would contribute $13,333 to the fund, provided that the farmer invested an equal amount. If the farmer invested less, the government's contribution would be correspondingly lower.

If, in a later year, the farmer's income fell, cash would be drawn from his stabilization fund before additional benefits were paid out under the income-insurance program. The combined total payout would again be limited – in our example, to $60,000 per year. The farmer's levy rates for farm-income insurance would decline and reach zero as the stabilization fund attained a predetermined maximum to cover potential losses.

Farm Adjustment Option

A farmer could withdraw the balance accumulated in his stabilization fund, including the government's matching contribution, when he decided to quit farming. The withdrawal from the fund would be tax-free and treated in the same way as a tax-free capital gain from the sale of farmland. The maximum of such tax-free capital gains from both the sale of farmland and the savings in the stabilization fund would be $500,000 – equal to the current limit on capital gains on farmland.

Family-Income Disaster Assistance

From time to time, market prices are so low and weather conditions so adverse that some farmers would suffer extreme hardship if no help were available to them. Should the provincial average farm income drop below a certain trigger point – say, 80 per cent of the average of the past five years – the "family-income disaster assistance program" would provide cash to farmers whose family income from all sources fell below the rural low-income line, currently set at some $14,000. Cash payments by government would pay all such farm families (after the payout of insurance benefits) half that amount – i.e., $7,000 per year. That assistance would also be extended to farm families with higher incomes, but payments would gradually decrease as incomes rose.

Program Interactions

The four illustrative programs are not independent of each other but are, to some extent, interactive and complementary.

The farm-income insurance program, for example, would provide every farmer (as defined by the eligibility criteria) with protection against income losses. It would be designed to be actuarially sound, so that the farmer's levies and the government's contribution would match the payout of benefits. The levy rates would be adjusted for regional and individual variations in the frequency of payouts.

If a farmer contributed to the income-stabilization fund, his levy rate for income insurance would be reduced by an amount corresponding to a reduced need for coverage, since payouts from the insurance program would be required only when the contributor's fund was exhausted. A substantial investment by the farmer in the stabilization fund could lower his levy rate to zero. Once the farmer had drawn on the insurance fund, however, the levy rate would be adjusted upward again.

There is also a relationship between the family-income disaster assistance payments and the first two programs. Triggered by a sharp decline in provincial or regional farm incomes, the disaster assistance program would provide funds only when the farm family income, after receipt of payouts under the stabilization fund and the income-insurance program, fell below $28,000. This additional assistance would be provided mainly to help farmers pay for necessities, including the obligatory farm-income insurance levy.

Potential Program Benefits and Costs

We can compare, first, the levels of support and, second, the impact on the financial situation of farmers under the existing programs and under the illustrative decoupled programs.

In 1987, Prairie farmers received $1.4 billion in cash payments under the *Western Grain Stabilization Act*. Had an income-insurance program and an income-stabilization fund, similar to those described above, been in effect, our exploratory estimates suggest that roughly half that amount would have been paid out in cash immediately and the remainder would have been credited towards farmers' stabilization funds (assuming that farmers who had income gains would have invested in such funds).

Also in 1987, the Special Canadian Grains Program added another $1 billion to the existing farm programs to help farmers through the income crisis. Under that program, the payout to Prairie farmers amounted to $815 million – or an average of somewhat over $6,000 per farmer; depending on their grain acreage, some farmers received more, while others obtained less.

Had a family-income assistance program of similar magnitude been in existence and had it been triggered by the disastrous market conditions, it would have paid out about two-thirds of the $815 million in cash. The remainder would have been available to match farmers' contributions to the income-stabilization fund.

The overall costs and benefits of the four decoupled programs would depend not only on the insurance levies and payouts but also on the limits of coverage. In general, the wider the range of insurance coverage, the greater the benefits and the greater the costs. The design of the programs is intended to maximize the benefits while holding down the costs. The immediate aim is to provide farmers with the same benefits as under current farm programs, but at lower cost.

It can be shown that even under very unfavourable market and income conditions, decoupled programs (including farm insurance, stabilization funds, and low-income assistance) could be operated at an overall cost comparable to the combined cost of the Western Grain Stabilization and Special Canadian Grains Programs. At other times, the cost could be reduced through increased participation by farmers in the funding of income insurance.

The benefits of farm programs can also be quantified by examining their impact on the financial-risk profiles of farmers. Applying the same estimation procedures as in Chapter 6, we can compare the effectiveness of one program with another: the lower the risk profile, the lower the risk of financial failure and the more effective the program in relation to program expenditures.

The decoupled farm programs described above compare well with the current Prairie farm programs. Under the current programs, the proportion of farmers in financial difficulty is somewhat lower than it would be under the decoupled programs. In addition, the current programs favour Saskatchewan and Alberta over Manitoba, and they favour middle-sized commercial farms – but not the large corporate farms – over marginal operations. The differences narrow when we only look at the financial situation of nonviable farms. In that case, the overall performance of both sets of programs is the same. There are differences among farmers, however. The decoupled farm programs would not be as favourable as the existing ones are to grain farmers or to some commercial farmers. Grain farmers would benefit less because of the shift from grain-oriented to commodity-neutral support. And among the commercial farmers, beginners with heavy debts would be disadvantaged because decoupled farm support would not cover expenses arising from farm loans.

In the longer run, however, all successful farmers could derive benefits from the decoupled programs over and above those provided under the present farm programs, because their stabilization funds would grow over the years.

The Working of a Decoupled Support System

The precise impact of decoupling support for Prairie farmers would obviously depend on the specifications of the new programs. Should a set of programs broadly similar to those sketched out above be adopted, we would expect, first, that by shifting the focus away from programs aimed at grain farmers towards a commodity-neutral program, there would be one less obstacle in the way of diversification into livestock production or into specialty or mixed farming.

Second, commercial farmers would have greater scope to plan their management strategies and to diversify their assets. Self-insurance would make a major contribution to income stabilization, thus strengthening their self-esteem. Farmers would be less dependent on capital gains from land and could retire or move out of farming more easily.

Third, marginal and unlucky farmers would be saved from severe family hardship, and there would be less incentive for them to hang on to the farm after a succession of bad years. Assistance for adjustment out of farming could be provided by other programs, such as the Canadian Rural Transition Program.

Fourth, the commitments and future liabilities of governments would be clearly set out. Once the rules of the game were fixed, uncertainty would be reduced for all concerned. There would be a significant reduction in the existing inconsistencies – and even conflicts – between programs, and there would be fewer opportunities to manipulate the political process in attempts to respond to special situations.

In effect, "decoupling" is a new recipe for delivering government support to agriculture. The Council is convinced that a package of programs that decoupled farm-production decisions from government programs should be explored. We recognize that such a package would require a major change in the attitudes and traditions of the farming community. And it would necessitate difficult political choices in determining who should receive income support and how the program should be administered. Obviously, that type of change could not be introduced overnight. However, the potential gains to be made in efficiency, self-reliance, and stability of income make decoupling a worthy objective for the medium to longer term.

Time will be needed to build an understanding of these gains and to get rid of some of the misconceptions that currently confuse the debate. There are those who spurn the idea because they identify it with welfare; yet the examples provided earlier in this chapter show that such a program can be based on sound insurance principles. It could include a welfare payment to low-income farmers, but that would be a matter of political choice. For commercial and corporate farms, which account for some 90 per cent of Prairie farm output, decoupling could provide a stabilization system that would be superior to the present programs in handling the risks of boom-and-bust cycles.

9 Policy Objectives and Recommendations

The Council believes that grain and oilseed production in the Prairie provinces is internationally competitive and that it will continue to make an important contribution to the Canadian economy. But the preceding discussion suggests that the Prairie crop economy faces even greater risks today than it did in the early postwar period. Policy changes are necessary to handle those risks effectively. Before putting forward our objectives and recommendations, we recall our principal findings.

Summary of Findings

Increased Risks in Prairie Grain Production

Grain production for export markets has always been a risky enterprise, depending, as it does, on the weather and on foreign demand. The weather remains a critical factor, as the recent drought reminds us. At the same time, the world markets for grains have become less favourable to Canada and more unpredictable. Demand for high-grade wheat – Canada's most competitive product – is growing more slowly than that for most other grains. Export capacity has become concentrated in a few countries or regions, the two most important of which – the United States and the European Community – are using competitive export subsidies in their struggle for markets. The growing self-sufficiency in grains in many parts of the world leaves the unpredictable Chinese and Soviet markets as the most important outlets for grain exports.

Canada is the most vulnerable of the major grain exporters. It sends a higher share of its most important crop – wheat – to foreign markets than do the United States, the European Community, and Argentina. Furthermore, the opportunities for Prairie grain farmers to spread their risks by diversifying their activities are generally more limited than those available to grain producers in the United States, the European Community, Australia, and Argentina. Our analysis of the variability of incomes arising from the production of some two dozen Prairie farm products shows that the prices of most of these tend to move together and that the opportunities for stabilizing income by changing the mix of farm activities are therefore quite limited.

We have also seen that the productivity of capital and other resources on mixed and livestock farms is generally lower than on grain farms. In addition, the major Prairie farm programs tend to favour crop producers to the detriment of livestock producers. It is not surprising, therefore, that despite the risks associated with grain production, many Prairie farmers are reluctant to attempt to diversify their operations.

Most Prairie farmers depend on off-farm occupations to supplement their income. In 1975, only one-third of farm households had a family member engaged in nonfarm work; in 1985, about three-quarters of the income of Prairie farm families came from nonfarm activities, and by 1987, most farm families in the Prairie region had at least one person engaged in some off-farm work.

Most of the nonfarm income was earned by women. Nearly 80 per cent of their off-farm occupations were in the service industries – teaching, medicine and health care, sales, and services. Opportunities for earning nonfarm income are limited by the lack of diversified industrial activity in some parts of the Prairies. As farms get larger, the farm population decreases. That makes some rural service centres unnecessary and increases the difficulties that members of farm families encounter in finding work off the farm.

The increase in the vulnerability of Prairie grain farming has to be seen in the context of the greater-than-average risk exposure of most farm families. The typical farm family is expected to manage a highly capital-intensive enterprise, in which market and production risks are exceptionally high. And partly because the enterprise requires so much capital, the family is likely to have all of its eggs in one basket.

Low and Unstable Incomes

There is a long-term downward trend in the prices of agricultural commodities. In the short run, government support programs can prevent a corresponding decline in farm incomes. In the long run, however, in the absence of controls on output, government assistance tends to reduce farm incomes by encouraging farmers to increase their output. Whether assistance is provided in terms of cheaper inputs or artificially higher prices, it leads to an increase in supply. This eventually translates into lower prices over the long term, since demand does not increase correspondingly.

The incomes of Prairie farmers are substantially below those of Canadians in industrial occupations. In fact, when all costs are taken into account, a large number of Prairie producers are running up losses. Those whom we have identified as being in a particularly difficult situation are the many full-time marginal farmers (working small farms) and the young, full-time commercial farmers.

This persistent cost/price squeeze is gradually pushing some farmers out of agriculture. It is also increasing the average farm size in the Prairies. If present trends continue, 3 per cent of Prairie farms will be producing 20 per cent of total agricultural output from that region by the end of the century. Close to 60 per cent of all farms will be commercial family farms, producing 70 per cent of the output. The 40 per cent of farms that we have classed as marginal will account for the remaining 10 per cent of output.

Farm incomes will continue to fluctuate widely in the foreseeable future. Grain prices are likely to follow a typical boom-and-bust pattern, giving rise to unstable incomes for all farmers – efficient and inefficient, commercial and marginal.

A High Level of Indebtedness

After a period of relative prosperity during the 1970s, the combined effects of excessive borrowing, low grain prices, high interest rates, and falling land prices generated financial stress in the western grain economy, especially among the highly leveraged producers. Roughly two-thirds of all farmers reported interest payments on debt in 1986. The average debt load ranged from $35,000 for small marginal farms to about $100,000 for medium-sized commercial farms and up to $300,000 for large corporate farms. However, the proportion of marginal farmers reporting debt was smaller than that of commercial or corporate farms. By 1987, 28 of every 100 Prairie farmers were in some financial difficulty, and the 1988 drought is likely to have worsened that situation. Among the farms in financial difficulty, the number of nonviable operations (those in which farm cash expenses exceeded family income) rose from 4 to 10 per cent between 1985 and 1987. Among marginal farmers, the middle-aged, part-time operators were least affected, while their full-time counterparts were very hard-hit. Half of those commercial farmers below the age of 35 were in financial difficulty, whether working part-time or full-time, in partnership or independently.

Many of the indebted operators see no prospect of ever paying off their debt. As grain prices rise, government support through transfers will likely decline, leaving them with insufficient net income to pay their debts. In the meantime, they are experiencing difficulty in obtaining operating loans or in converting their assets to cash. In the absence of some form of debt restructuring, many will have to quit farming.

Management as a Scarce Resource

The increase in the capital intensity of grain farming, the importance of tax considerations, and the wide array of chemical inputs required for grain production are examples of the greater demands that modern production is putting on today's farm owner/operator. Findings from several research studies show that management is a scarce resource in Prairie farming; they suggest that many farm families do not have the capital and management skills required to run an efficient-sized operation. Our own research shows that the successful combination of two or more complementary crop and livestock operations can increase farm returns, but such combinations stretch management capabilities even further.

There are wide variations in the efficiency with which different farmers manage their resources in both the commercial and the marginal enterprises, but resource productivity is substantially lower in small operations than in larger ones. We found that farmland, labour, capital, and material inputs on the small marginal farms were only half as productive as on the medium-sized commercial farms. The reason was not that marginal farmers cultivated fewer acres and used lower levels of inputs, but that regardless of the amount of resources at their disposal, they employed them less efficiently.

In general, further expansion of the average farm size can be expected to lower unit costs. The advantages to be derived from such expansion will vary somewhat with the type of enterprise, since the potential for a further reduction of unit costs is greater in livestock than in grain production. This does not imply a switchover to megafarms but, rather, a continuing expansion of family-operated commercial farms.

Income Support from Government

Unlike grain producers in the United States and the European Community, who know, when they seed their crops, that they will receive a guaranteed price, Prairie farmers have traditionally had to depend on the prices negotiated on the international market by the Canadian Wheat Board. From 1981 to 1988, grain prices, which were dropping, were driven even lower by the intervention of foreign governments. The Canadian government therefore took special measures to enable Prairie producers to survive. It transferred the equivalent of about $20,000 per farmer to them in 1987, in addition to providing transportation subsidies worth about $7,000 per farmer; it also wrote down substantial deficits on the Farm Credit Corporation's balance sheet and in the Canadian Wheat Board's accounts. In addition, Prairie producers benefit from a number of indirect support programs and from a variety of complementary and compensatory provincial programs. We have also noted, however, that Prairie producers are not the only Canadian farmers to receive income support. Agricultural producers in central Canada also receive substantial assistance as a result of supply management.

Income-support programs have maintained income levels across the Prairies and have enabled thousands of farm families to remain in agriculture. They have also signaled to Canada's trade partners that this country is not willing to give up its role in the international grain and oilseed markets. But we have seen that the existing set of support programs has a number of weaknesses.

First, the income-support programs ignore the buildup of debt, while inappropriate credit policies appear to have aggravated it. Second, more income support goes to the larger farms than to the smaller ones; and subject to a ceiling in both the *Western Grain Stabilization Act* and the Special Canadian Grains Program, it is paid regardless of need. Third, support programs encourage dependency on government and discourage innovation. The level of assistance is not the same for all farm activities, and so farmers are likely to make production decisions on the basis of the programs available to them rather than of market signals. Little assistance is provided to farmers who want to move out of agriculture, compared with that available to those who remain on their farms. Fourth, the different federal and provincial agricultural programs are inconsistent in their objectives and conditions of eligibility. Farm programs are used as tools in interprovincial competition; indeed, some provinces have even adopted farm programs to offset the effects of those of the federal government. Finally, federal support for Prairie agriculture has jumped in the last three years – to over $4 billion in 1987. It will be impossible to sustain expenditures at that level.

Objectives for Policy

The Council believes that Prairie grain production merits public support because it is competitive and contributes to Canada's economic well-being. Since there are numerous claims on society's resources, however, this support must be provided in a way that is cost-efficient and that reinforces, rather than conflicts with, Canada's other economic goals. The Council puts forward six objectives for agricultural policies and programs directed at Prairie farming. These broad goals provide the foundation for the policy recommendations that follow.

1 *Reduced Income Instability*

Most businesses in the primary sector – mining companies, for example – suffer from unstable incomes; unless they can draw on large financial resources or unless they enjoy a degree of market power, they risk being shut down by short-term fluctuations. That is also true of the agricultural sector, where income instability is endemic among those who produce for export markets. Yet individual farmers cannot rely on private financial resources or on market power to stabilize their incomes; nor can they insure their risks in financial markets. Canadians are already committed to sharing the uninsurable risks of individuals in many areas, most notably through the unemployment insurance program. The Council supports the continued application of this principle to the Prairie farm sector. Agricultural policy should therefore include stabilization programs. If they are to help the farm community to handle the risks in Prairie crop production, such programs should counter the boom-and-bust cycles, shaving both the peaks and the troughs. They should also encourage asset diversification.

2 *Long-Term Competitiveness*

There are numerous distortions in domestic and international agricultural markets as a result of widespread government intervention. Programs directed at the Prairie grain economy should avoid perpetuating those distortions and should promote competitiveness both within Canada and on world markets. Support programs should promote innovation and technical change, and they should encourage farmers to give up inefficient activities rather than bolster such activities with subsidies. Other programs should be available to make it easier for farmers to adjust by leaving the farming industry. Internationally, Canada must continue to work with its trade partners to establish a less wasteful and destructive set of farm-support programs.

3 *Increased Responsibility for Farmers*

The recent trend to greater dependence on federal and provincial governments should be reversed. This means that support programs should be modified so that they do not discriminate in favour of certain commodities at the expense of others; it also means that the share of public expenditures that goes to infrastructure-type programs (such as research and development, management training, and so on), should be raised. Enabling efficient managers to reap the benefits of their skills will often mean allowing less efficient ones to fail.

4 *Conservation of Prairie Soils*

Prairie soils are vulnerable to overexploitation and poor husbandry. Policies that lead to artificially high returns to certain crops or to the neglect of rented farmland threaten the future viability of Prairie crop production. Programs should be framed that will encourage farming practices that preserve the fertility of the soil.

5 *Reduction of Interregional Tensions*

The high level of government involvement in agriculture, particularly through regulation and through direct and indirect transfers, naturally leads provincial governments and regionally based producer groups to try to maximize the benefits they receive from federal programs. In the past, this has led to resentment on the part of those provinces and producers who felt that they were not being treated fairly. New programs, as well as modifications to existing programs, should be designed in such a way as to reduce regional friction.

6 *Lower Government Expenditures*

The present level of support for Prairie agriculture is not sustainable in the long run. Because of the 1988 drought and of continued uncertainty in the international arena, the federal government may not be able to reduce expenditures in the immediate future. It should nevertheless plan for lower support levels in the medium term. Programs to reduce income instability and to promote long-term competitiveness will have to be designed to include a larger element of self-financing. Where possible, support should be on the basis of identified need rather than on that of universal entitlement.

The foregoing set of objectives follows from the Council's analysis of the outlook facing the Prairie grain economy. It does not include a number of other goals that have traditionally been pursued by those responsible for agricultural policy in Canada and elsewhere: preservation of the family farm and of rural communities; parity between farm and urban incomes; and the settlement and occupation of Canada's territory in the West.

As we have seen, most commercial farms in the Prairies are family-owned and -run. They would benefit from a reduction in the instability of their incomes and from a strengthening of their management. Increased competitiveness is also likely to bring Prairie farm incomes more in line with those of city dwellers. Similarly, many rural communities would benefit from better-managed and less vulnerable farms. But we have not given priority to family farming or to a particular distribution of rural population where that would conflict with other objectives.

If Canadians decide that these social objectives should be actively pursued, we believe that the objectives, as well as their costs and benefits, should be explicitly spelled out in public-policy documents.

Recommendations and Policy Directions

One policy option is to leave the existing support programs for Prairie agriculture untouched. It could be argued that the present set of policies, which is the result of pressures applied by numerous lobbies and laborious consultation, is as good a set of compromises as we can realistically hope for. With rising grain prices, there is less urgency to improve policies. But our research shows that existing policies and programs have not attained the objectives that we have set out above. Moreover, a decision to leave current programs alone as the market improves would encourage Prairie farmers to believe that in the next major downturn, similar levels of special assistance will be available. Given the strong probability of recurring boom-and-bust cycles in grain and oilseed markets, that would represent an unquantifiable liability for future governments. If the GATT negotiations on agriculture progress, Canada will, in any case, be under pressure to modify some of its farm programs.

The Council believes that farm policies for the Prairies can be improved, first, to avoid a repetition of the recent crisis; and, second, to enhance the efficiency and self-reliance of farmers so that they themselves will be in a better position to manage the risks endemic in the Prairie grain economy. We note that the federal government has already shown its willingness to re-examine support programs in making major changes to the *Western Grain Stabilization Act* in August 1988 and in launching a discussion of the decoupling of farm support.

We consider two scenarios in framing our recommendations: one in which the GATT negotiations stall, and one in which significant trade liberalization takes place (see box). In the next few pages, we make eight recommendations that modify existing policies in an incremental approach, over the short and medium terms. We then put forward two recommendations that apply to a more open international trading environment. In our final recommendation, we set out directions for far-reaching changes that should be considered for the longer term.

Improvements to Existing Programs

Implementation of the following eight recommendations would improve the competitiveness and efficiency of Prairie farming; we believe that these recommendations should be adopted regardless of whether progress is made on trade liberalization. They entail modifications – sometimes of a significant nature – to current programs, but these changes can generally be accommodated within the existing traditions and framework. In many cases, they follow and strengthen recent policy decisions. Taken together, these recommendations would not increase federal expenditures. Indeed, they could be expected to reduce them over time, as the insurance, income-stabilization, and adjustment measures complement one another more effectively.

Farm Debt

Potentially efficient farm operators are handicapped by their debt burden. While a general debt write-down would undoubtedly relieve that burden, it would not signal the government's intention to encourage efficiency and competitiveness. It would also increase public expenditures considerably. Directing financial institutions to carry part of the loss would reduce the costs to the public purse, but it would adversely affect their willingness to finance the farm sector in the future.

Equity financing has been proposed as a solution to Prairie farm debt. One way to promote it would be to pool investors' funds in order to spread the risks of lending to farmers, but no consensus has yet developed as to the feasibility of equity financing or as to its acceptability to farmers. Some analysts believe that tax incentives would be required in order to give this option a chance to "get off the ground." It is clear, however, that equity participation, which would require extensive subsidization by government, would not further the Council's objectives.

The Council believes that the current case-by-case treatment of Prairie farm debt by the Farm Debt Review Boards is the most useful approach in the short term.

1 **We recommend**

- **that the federal government continue to support the work of the Farm Debt Review Boards; and**
- **that the federal and provincial governments assist the private sector in exploring and developing mechanisms for equity financing by private enterprise.**

Overview of Recommendations

	With or without trade liberalization	Dependent on trade liberalization
Changes in agricultural policies:		
Improvements to existing programs	1 Improve the debt situation 2 Extend *Western Grain Stabilization Act* 3 Extend crop insurance 4 Improve lending policies 5 Diversify farm assets 6 Extend Canadian Rural Transition Program 7 Improve farm management 8 Conservation Reserve Program	9 Phase out transportation subsidies 10 Extend conservation
Replace existing programs with a decoupled income-support system		11 Decouple income support • income insurance • income stabilization • farm adjustment • income disaster assistance

Income Stabilization

The recent amendments to the *Western Grain Stabilization Act* are likely to improve its working, in particular by making it more neutral across different crops, by encouraging farmer participation, and by putting the fund on a sounder footing. However, income support is still withheld from some crops and from farm-fed grain. In addition, the program's anticyclical potential is not fully utilized. Finally, allowing farmers to choose whether or not to participate opens the door to demands for *ad hoc* crisis assistance from non-participants in times of hardship. As we have seen, such demands have historically given rise to a patchwork quilt of improvised programs.

2 **We recommend that the federal government amend the *Western Grain Stabilization Act***

- **to make cash flows from all crops, as well as imputed revenues from farm-fed grain, eligible for stabilization payments;**
- **to vary farmers' levies in line with an average of crop prices, so that levies will be higher when prices are strong and lower when prices are weak; and**
- **to make the program compulsory.**

Insurance

Crop insurance is important to farmers, as the current drought has demonstrated. At present, the exclusion of pasture and forage from insurance contracts encourages farmers to seed crops for insurance purposes, even though good management considerations would suggest that they should not. Moreover, as in the case of the *Western Grain Stabilization Act*, leaving participation up to the farmer opens the door to *ad hoc* measures when disaster strikes. The extension of a similar program to livestock producers would increase the consistency and neutrality of output insurance on Prairie farms.

3 **We recommend that the federal government**

- **extend crop insurance to cover pasture and forage;**
- **make the program compulsory; and**
- **explore the feasibility of extending a similar program to livestock producers.**

Lending Policies

The Farm Credit Corporation and some provincial credit agencies have been asked to pursue contradictory lending policies: while their operations are supposed to be financially sound, they are encouraged to take on risks that the commercial lending institutions have rejected. In addition, the Farm Credit Corporation is now being used to deliver a series of debt-relief programs. We believe that the public credit agencies should be operated in accordance with sound business principles.

Furthermore, public credit agencies should not pursue lending policies that encourage farmers to take on debt in excess of their capacity to service and repay. Lending in the late 1970s was largely based on the value of collateral – farmland – rather than on expected cash flow. The House of Commons Committee believes that this is still the case: "Few, if any lenders, however have completely moved away from market-value accounting statements. Lending decision-making is still viewed first as a security evaluation process."[1]

4 **We recommend that the federal government**

- **direct the Farm Credit Corporation to calculate the repayment capacity of farm borrowers on the basis of their anticipated cash flow rather than on the value of their land-based assets;**
- **direct the FCC to favour productivity-enhancing expenditures rather than land purchases; and**
- **refrain from using the FCC as a delivery vehicle for special assistance programs.**

We also recommend that provincial governments adopt similar guidelines for their credit agencies.

Diversification of Farm Assets

The concentration of a farm family's assets in farmland, buildings, and machinery renders its financial situation more vulnerable, while making it harder for the owner/operator to leave agriculture. Spreading the financial risks by diversifying investments would reduce the instability of income; lower the obstacles to leaving the farm sector or to retiring when land prices are depressed; and discourage speculative land purchases, which increase the overall volatility of the Prairie farm sector.

The existing $500,000 tax exemption on capital gains on farmland is important in this context. It gives farmers a privileged tax status, compared with the rest of the population. The exemption has been justified by the fact that farmers do not benefit from employee pensions and seldom invest in registered retirement savings plans; as a result, they do not benefit from these tax expenditures. But the capital-gains exemption on land encourages farm families with savings to plough them back into the farm, thus increasing their financial vulnerability.

5 **We recommend that the $500,000 tax exemption on capital gains be modified to enable a farmer to replace a certain proportion (e.g., one-fifth) of the tax-free capital gains from farmland with tax-free capital gains from other sources.**

Adjustment out of Agriculture

At present, farmers are only eligible for adjustment assistance under the Canadian Rural Transition Program if they can demonstrate that they are in financial difficulty. There is no assistance for planned phasing-out while they are still financially sound. On the other hand, farmers who persevere in agriculture receive support from a number of different programs. That makes adjustment more difficult instead of facilitating it.

6 **We recommend that the federal government**

- **enrich the existing training and mobility programs, and allow farmers to gain access to the training programs while phasing out their farm activities;**

- **continue to provide income support for a three-year period to farmers who leave agriculture – for example, by providing one-half of the support that they would have received had they continued to farm, up to a certain maximum; to be eligible, a farmer would have had to have farmed for at least 10 years before his departure; the continued support would be based on the crop rotation adopted by that farmer during the year preceding his departure; he would have to repay it if he returned to farming within 10 years; and**

- **take the necessary steps to facilitate the access of farmers to the Canadian Jobs Strategy and to other labour-adjustment programs.**

Farm Management

Prairie farming is becoming more complex and more capital-intensive. To succeed, farmers must be skilled crop and livestock producers, as well as competent mechanics and accomplished financial managers and market analysts. Taking advantage of opportunities for the diversification of farm output requires access to specialized information systems and experience in using them. Extension services play a major role here, but they are unlikely to be able to respond to all the needs of the different types of farm enterprise. Private-sector farm-management experts have the skills to develop financial and other management programs tailored to the needs of farmers. But in the absence of a demand from the farm sector, they have little incentive to do so.

7 **We recommend**

- **that the federal and provincial governments evaluate existing farm-management programs with a view to better targeting them at current needs, and particularly at the opportunities for diversifying farm output;**

- **that the federal and provincial governments actively encourage the private sector to assist the farming industry in improving its risk management by acquiring up-to-date financial and marketing skills and by extending its use of computerized information systems on the farm; this may require seed money and cooperative approaches to course design; and**

- **that farm organizations play an active role both in cooperating with the public and private sectors in designing farm-management courses and in encouraging their members to take advantage of them.**

Conservation

Strong grain prices in the 1970s, along with the grain-oriented support programs, have encouraged Prairie farmers to increase their seeded acreage. In the long run, that leads to overexploitation of the fragile Prairie soils. Returning land that is unsuitable for crop production to pasture or forage would prevent soil erosion and improve husbandry.

8 **We recommend**

- **that the federal and provincial governments establish a Conservation Reserve Program, under which farmers who convert lower-yielding grain acreage into forage land and keep it out of cultivation for at least 10 years would receive financial compensation;**

- **that governments explore the economics of using such land to establish systems of interacting shelter belts to reduce wind speed and to trap soil moisture; and**

- **that provincial governments continue the practice of purchasing land that is unsuitable for crops and placing it in a permanent conservation reserve, available for lease as pasture land.**

Participating in Trade Liberalization

Canada would benefit from the liberalization of trade in agriculture commodities. The extent and distribution of the gains would depend on the way in which the trade-distorting measures would be phased out and on the commodity coverage. Prairie grain and oilseed producers are hoping for a reduction in the export subsidies of the United States and the European Community, and for easier, more secure access to Japanese and other markets.

To improve the chances that trade negotiations will succeed, all major participants must give up something. With the exception of the Special Canadian Grains Program, Canada's support programs for Prairie producers are, as we have seen, less trade-distorting than those of the United States and the European Community. Yet one measure, the *Western Grain Transportation Act*, is widely considered to be a trade-distorting program.

The Canadian government is likely to be under considerable pressure to modify its support for grain transportation as the multilateral negotiations proceed, although the trade-distorting effect of that support is minimal, compared with that of the export subsidies of the United States and the European Community. Modifications could take the form of making the support less product-specific, reducing it, or effectively phasing it out.

On the domestic front, the *Western Grain Transportation Act* implements a policy that, for historical reasons, increases the returns to grain farmers at the expense of livestock producers and of farmers who devote their land to forage and pasture. By increasing the price of grain fed to livestock, the Act influences farmers' decisions in a way that often contradicts market signals. At the same time, increasing the cost of grain available for further processing discourages the startup of grain processing in the Prairies. The Act also maintains a regulatory hold on transportation in the Prairies, at a time when business in other parts of the country is benefiting from deregulation.

Grain farmers, however, count on transportation subsidies to cover part of the cost of shipping their product to export points far from the farm. Most of them would find it harder to compete in the absence of any transportation assistance, while changes in the way in which assistance is provided would benefit some and penalize others. On the other hand, significant trade liberalization can be expected to benefit all Prairie farmers by increasing and guaranteeing access to foreign markets.

The proposed experimental change in the method of paying the existing subsidy in British Columbia and Alberta would make it less product-specific. Such an experiment clearly merits consideration, for both domestic and international reasons. This effort to widen the application of the subsidy may satisfy the domestic need for reform, but it may not avoid further pressure on Canada in the international negotiations. In this case, the reduction and possible phasing-out of the transportation subsidy should be explored, on the understanding that farmers will be at least partially compensated for forgone benefits and that the adjustment will be synchronized with the implementation of trade liberalization by other countries.

9 **We recommend that if the current trade negotiations lead to a significant reduction in competitive subsidies and in other obstacles to Canadian grain exports, the federal government modify its policy of subsidizing the transportation of grain under the *Western Grain Transportation Act*. Farmers should receive compensation for reduced benefits.**

The government should design the adjustment and compensatory mechanisms in consultation with the four western provinces and with Prairie farm groups. It should take account of the offsetting benefits that will flow from a reduction in trade-distorting measures in other grain-producing countries and of the timetable for that reduction, as well as of the results from the planned experimental changes in the method of paying the existing subsidy in Alberta and British Columbia.

Liberalization of the international grain trade may also take the form of reducing output through "acreage set-aside" programs. Should that happen, Canada could usefully participate in the program and extend its conservation measures to some of the nonprime cropland in the Prairies, thereby reinforcing its conservation measures.

10 **We recommend that should Canada's competitors – the United States and the European Community – commit themselves to an effective output-reduction program through acreage set-asides, this country participate by extending its Conservation Reserve Program to include a certain proportion of its cropland.**

Decoupling Farm-Income Support

Severing the link between support for farm income and the production of particular farm commodities is under consideration in the major agricultural producing countries of the OECD. Effective decoupling would strengthen the price mechanism in both the domestic and the international markets. It can be expected to cut down surplus production, increase the individual farmer's opportunities to reap the rewards of good management, and reduce the likelihood of *ad hoc* government intervention.

The income support provided to Prairie farmers could be decoupled in many different ways. In Chapter 8, we set out four complementary programs by way of example:

- a program that would insure all farmers against income loss, to be financed equally by government and farmers;
- an optional, self-managed, income-stabilization program, in which government would match the farmer's contribution;
- an adjustment feature in the income-stabilization fund that would encourage asset diversification and facilitate early withdrawal or retirement from farming; and
- low-income assistance in times of particular hardship.

These characteristics, the Council believes, respond to the objectives – reduced income instability; long-term competitiveness; increased responsibility for farmers; and lower, more predictable government expenditures – set out above.

Replacing commodity-based support with decoupled support will require extensive planning and consultation with farmers and with provincial governments. It will also require a favourable economic climate both at home and abroad. Progress in the GATT negotiations would provide the Canadian government with an opportunity to reform its support programs for farmers. We urge that such an opportunity be seized, and

11 **We recommend that the federal government, in consultation with provincial governments and farm associations, study the feasibility of introducing a system of decoupled income support for farmers. Such a system should reduce the instability of farm incomes and reward efficient farmers, while providing a safety net in hard times for farm families with low incomes. The program should be designed to make it accessible to as many Canadian farmers as possible.**

Conclusion

Canada cannot escape the risks of the grain trade and the vicissitudes of the weather. The real challenge for federal and provincial agricultural policies is to build self-reliance, so that efficient farmers may prosper and that Canada as a whole may enjoy the benefits from the wide expanses of Prairie land and from the capital and the expertise of the farm community. Policies for Prairie grain in the recent past have been generous in maintaining income, but they have had stifling and destabilizing effects on the farm sector by hampering innovation and diversification, by putting up obstacles to adjustment out of farming, and by encouraging a buildup of debt burdens. We have mapped out recommendations for modifying the existing programs in order to get rid of these negative effects. We have also outlined the key features of a reform package that could both foster efficiency and manage the risks that will continue to challenge Prairie crop producers.

The fortitude of Prairie farmers in the face of the hard times of the 1980s is a clear demonstration of their underlying strength. The grain economy will clearly continue to be fundamental to the health of the Prairie provinces and to benefit all Canadians over the longer term. With appropriate policies, we can ensure that the next down phase of the cycle, whenever it comes, will not be permitted to take such a heavy toll, because farmers and governments will be in a better position to handle the risks in the Prairie grain economy.

Comment

Ken Stickland

While I do not wish to detract from the value of this excellent report and while I endorse its recommendations, I wish to record my disappointment with the handling of several issues.

First, the interpretation given by the Council (prior to my appointment) to the Prime Minister's reference resulted in a research plan that gave insufficient attention to the prospects for livestock and that began work on farm and off-farm diversification too late to permit the inclusion of specific recommendations on the subject of livestock in the report.

Second, the market demand signals for grains and oilseeds are, in my opinion, correctly interpreted in Chapter 2, but the policy analysis and recommendations do not spell out any measures that would encourage institutions and farmers to produce more oilseeds and feed grains, and relatively less high-quality wheat. For most Prairie producers, an optimistic future for exporting raw crops means more canola, oats, barley, peas, and medium-quality wheats. That is why innovative marketers wish to update the 1935 Canadian Wheat Board. I am therefore disappointed that improvements to the apparently sacred policies of the Canadian Wheat Board on oats and barley marketing were not addressed in the recommendations.

Third, a difficult trade-off that lies ahead for federal decision-makers is buried in Chapters 1 and 9: I want to be sure that Prairie leaders will closely monitor subsequent research and events. Because the Council's research on regional equity in agricultural support has yet to be completed, the report does not provide a regional breakdown of government transfers through marketing boards and other policies. Hence there is no attempt to link Goal no. 6 (to reduce government costs) and the need to reduce protection in equal measure for agricultural sectors in central Canada. It would be blatantly unfair for our international negotiators to agree to cut the Crow Benefit or to reduce expenditures under the Special Canadian Grains Program for the Prairies while maintaining dairy subsidies for central Canada, for example. I favour trade liberalization in all agricultural sectors, with the burden of change to be distributed evenly across all regions of the country.

Finally, Recommendation 9 assumes that the Alberta/British Columbia plan to improve the current distribution of the Crow Benefit will be implemented before larger reforms to the *Western Grain Transportation Act* are forced by trade liberalization. Given the urgency of providing clear signals to grain farmers who are now restructuring, I would have preferred that this regional experiment be treated more boldly and that it be mentioned as a separate recommendation in the earlier section on "Improvements to Existing Programs."

Notes

CHAPTER 3

1 Dale Hathaway, *Agriculture and the GATT: Rewriting the Rules*, Policy Analysis in International Economics (Washington, D.C.: Institute for International Economics, September 1987), p. 14.

2 Farm employment in the six original member countries had fallen to about 6 million by 1984, but with the accession of the United Kingdom, Ireland, Denmark, Greece, Spain, and Portugal, during the 1970s and 1980s, the total number of farmers in the Community is currently between 10 and 11 million.

CHAPTER 4

1 See T. Vollrath, *Revealed Competitive Advantage for Wheat*, U.S. Department of Agriculture, International Economics Division, Economic Research Service Staff Report (Washington, D.C.: February 1987); and George Brinkman, "The competitive position of Canadian agriculture," *Canadian Journal of Agricultural Economics*, July 1987.

2 Erucic acid is believed to be a cause of heart lesions; glucosinolates are an antinutritional substance that is harmful to livestock and poultry.

CHAPTER 7

1 Canada, House of Commons, *The $22 Billion Problem: Options for the Financial Restructuring of Farm Debt*, Report of the Standing Committee on Agriculture (Ottawa, July 1988), p. 43.

CHAPTER 9

1 Canada, House of Commons, *The $22 Billion Problem*, p. 43.

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